State of Indiana

GMIS / PeopleSoft

Technical Standards & Procedures

GMIS Standards & Procedures
GMIS Team
GMIS_Standards_v3.doc
November 1, 2001

Table of Contents

Chapter 1. Introduction

The Government Information Management Systems (GMIS) is comprised of PeopleSoft Public Sector Human Resources and Financials application modules. The State of Indiana has licensed the PeopleSoft applications for use by State Agencies and is maintained and supported by the Department of Administration, Division of Information Technology (DoIT). Support includes the PeopleSoft software and hardware such as the E7000 enterprise server which houses the software and the MS SQL Server relational database management system; and the storage facilities, network application and file servers. DoIT also provides the necessary connectivity and assistance for the client agencies' workstations. In addition, DoIT provides the "core" GMIS project team including system administrators, application developers, business analysts, and project managers, as well as the many staff that support the servers, network, and other utility services.

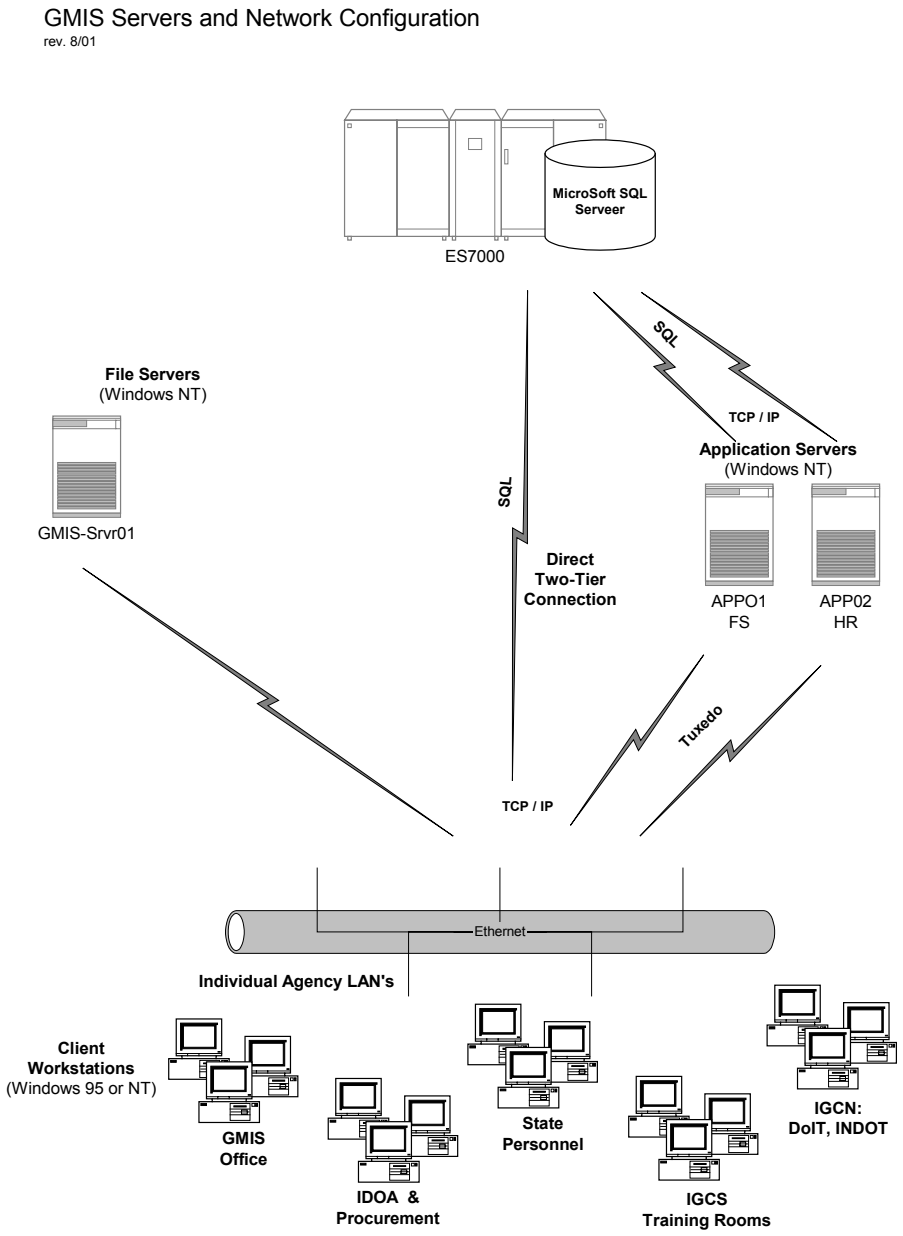
This document defines the technical standards to be used by the GMIS/PeopleSoft Projects for the State of Indiana and any of its agencies and organizations. Separate documentation is maintained by the various agencies regarding the Business Policy and Procedures for the use of GMIS/PeopleSoft.

These technical standards are revised and continuously updated.

In a project as complex as GMIS, the adherence to standards is critical to efficient development and maintenance of the application as well as effective communication between the various partners in the project.

Chapter 2. Application Architecture

The PeopleSoft environment is made up of several components across multiple platforms.



2.1 Database Server

Currently the state's GMIS/PeopleSoft database environment exists in a clustered MS SQL Server on the ES7000. Multiple subsystems are required for system integrity and have been requested. References to Development and Production in this section relate to the future multiple subsystem database server configurations.

2.1.1 Databases

PeopleSoft databases contain application data (department tables, employee status, Vouchers, Vendors, etc.) and PeopleTools objects (tables, panels, security, menus, code, etc.). Note that SQR programs, Crystal report, and COBOL programs do not exist within the database and are not considered PeopleTools objects.
Typing the database name into the database field on the PeopleSoft sign-on panel identifies the database being accessed. Once in the PeopleSoft application, the database name is displayed at the bottom of the panels. The following sections describe the different databases, their functions, and their location on the database server.

2.1.1.1 Production

The FSPRD and HRPRD databases contain production data. PeopleTools modifications will be migrated to the production database from the respective QA database.

2.1.1.2 Quality Assurance

The FSQA and HRQA databases are used for integration and performance testing. PeopleTools modifications will be migrated to the production database from the respective Development database. PeopleTools objects will not be developed here.

2.1.1.3 Development

The FSDEV and HRDEV databases will be used for all application development (via PeopleTools, SQR, Crystal Reports, COBOL, etc.) and initial Development testing will take place. As part of Development testing, data can be inserted and altered to accommodate the needs of testing. All PeopleTools objects must be developed and tested in this database before migrating to the appropriate Quality Assurance database.

2.1.1.4 Training

The FSTRN and HRTRN databases will be used for end user training. These databases will be copied from FSPROD/HRPROD as necessary to administer training.

2.1.1.5 PeopleSoft Reference

The FSDMO and HRDMO databases provide a reference baseline for the system as shipped and modified by PeopleSoft delivered fixes and updates.

2.1.1.6 Transition

The FSAUD and HRAUD databases are used, when applicable, to import updates and fixes from PeopleSoft via Data Mover scripts. These databases contain a limited number of tablespaces and are truncated prior to every import. PeopleTools objects are migrated from FSAUD/HRAUD to the PeopleSoft Reference databases.

2.1.1.7 Special Implementation

Occasionally implementing agencies or Implementation Partners may request a database instance for implementation modeling. The FSVNx databases may be used for this modeling. These will be ‘unsupported’ databases that will not have change control procedures applied, unless provided for through the establishment of an MOU between the agency and the Division of Information

Technology. Vendors will be granted sufficient rights to manage these environments without impairing the security and integrity of other environments. No development will be migrated out of the FSVNx environment; nor will the GMIS Team migrate fix/updates or SOI development into the FSVNx database. All PeopleTools objects must be developed and tested in the FSDEV database before migrating to the appropriate Quality Assurance database. Any support work requested by an agency or implementation vendor for the FSVNx database may be billed to that agency at current DoIT rates.

2.2 Batch Server

2.2.1 Libraries and File Locations

The application files will reside in three primary locations; the batch server, LAN file server, and on workstations. The PeopleSoft application is located in the ES7000and in the Windows environment on the file server and workstation.

2.3 Application Server

2.4 File Server

The file server is used to maintain a master copy of the system programs (executables) from which the workstation is operated. Separate file server environments match those of the database server, for example, FSDEV, FSQA, FSPRD, etc.
Appendix A details these file directory structures.
The LAN file server will also serve as the storehouse of prior versions of non-PeopleTools objects (Cobol, Crystal Reports, DMS, and SQR programs). In the event one of these objects is modified, the current production version of the object will be moved to a backup location. See the Modifications section of this document for details.
The project team will be notified of proposals for major additions, changes, or deletions to the PeopleSoft network directory structure prior to implementation. In addition, project team members wishing to establish a new directory structure should notify the PeopleSoft System Administrator.

2.5 Workstations

2.5.1 Workstation Directories

PeopleSoft requires several directories and drive mappings on each workstation. The installer must assure that the T: drive is available to be mapped to \\GMIS-SRVR01\shared. A c:\temp directory must exist or be created by the installer. During the workstation setup procedure, two directories are established: c:\ps and c:\user.

2.5.1.1 C:\ps\

Within this directory there are 3 subdirectories: cache, sql, and sqr. PeopleSoft stores, by database, object data information in the cache directory. If an object has not changed since it was stored in cache, PeopleTools uses the object from cache instead of retrieving the object from the database. If unexpected results or unexplained errors occur, one or more of the cache files may be corrupt; exit the PeopleSoft application, delete the cache directory, re-launch the application. SQL and SQR directories are used for personal SQL files or SQR programs. The c:\ps\sqr directory must be one of the PSSQR flags to run an SQR program from an application menu.

2.5.1.2 c:\user\

The three subdirectories within this directory are crw, sql, and sqr. These directories are used to store personal Crystal reports, SQL files, or SQR programs. C:\user\sqr is setup as SQR search directory 3 as part of workstation setup. (Note: Even if the development occurs on the workstation, the various components will be re-created in the FSDEV/ HRDEV environment and then migrated through change control before being applied in production.) The database and file servers are backed up on a nightly basis. Any development stored on the workstations hard drive is the responsibility of the developer. The hard drive should be backed up to disk or the LAN on a regular basis.

2.5.2 Other Workstation Applications

In addition to the PeopleSoft application registry entries, workstations need the following applications installed: Microsoft ODBC connectivity for Microsoft SQL Server; this should be available in the version 2.5 of the MDAC (Microsoft data Access Components). Microsoft Office, either version 95, 97, or 2000 may be helpful (for Word templates and Excel spreadsheet output from PS Query).

Chapter 3. Implementation Standards

3.1 General

The State of Indiana has implemented PeopleSoft as a single enterprise system. Therefore, nearly all of the system implementation, support and maintenance activities must be done in a coordinated, centralized manner. Implementing agencies, whether supported by vendor partners or the central GMIS Team, must follow these GMIS Standards.

3.1.1 Business Unit Setup

3.1.1.1 Central Administration

The state makes considerable use of TableSet sharing and the impact of changes to those configurations can be significant. Therefore, the central GMIS Support Team does the exclusive maintenance to TableSet values as well as the majority of Business Unit setup.

3.1.1.2 Agency Definition

Agencies can define and configure as needed for their implementations -- they just need to provide their configurations to the central GMIS Support Team for impact assessment, adherence to standards, and for actual entry.

3.1.1.3 Implementation Environments

The GMIS/PeopleSoft system consists of a number of database environments with particular purposes relative to implementation activities:

- Development -- FSDEV or HRDEV: Fit-Gap and any Development/Data Modeling
- Quality Assurance -- FSQA or HRQA: User Acceptance Testing
- Production -- FSPRD or HRPRD: Live, Production Work
- Training -- FSTRN or HRTRN: User Training

Separate database environments are not established for each implementation -- multiple projects may occur simultaneously. See Chapters 2 and 10 of these Standards for more information on these database environments.

3.1.2 PeopleSoft Upgrades, Maintenance

Implementing agencies will be incorporated into the planning and execution of PeopleSoft upgrades and will be made aware of the application of Fixes and Updates.

3.1.3 Security Administration

Chapter 8 of these Standards details the design and mechanics for security in the system.

3.1.4 Central Documentation

Chapter x of these standards details the design, mechanics and security of documentation in the system. In general, this documentation is on a server housed and maintained by DoIT. State agencies and implementation partners will have their own work and shared directories with security groups

for their memberships. The GMIS Enterprise will move required deliverables developed in the work directories to the shared directories for viewing.

3.1.4.1 System Administrative Processes

[Documentation of the System Administrative Processes is under development.]

3.1.4.2 Business Processes

The GMIS Team can facilitate changes in Business Processes. Changes or modifications to the applications to accommodate existing Business Processes must be discussed with the GMIS Team.

3.1.5 Customer Support

3.1.5.1 GMIS Central Support Team

A Problem Reporting system is maintained that enables implementers and users to report system problems and make system change requests. The status of the problem fixes and changes is periodically updated and viewable on the intranet. See Chapter x of these Standards for details.

3.1.5.2 PeopleSoft Support

Problems reported to PeopleSoft through Customer Connection and/or requests for services from PeopleSoft need to be coordinated through the central GMIS Support Team. Our Problem Reporting system includes references to PeopleSoft case numbers and resolution ID's. State agency staff and implementation partners are provided with PeopleSoft Customer Connection ID's so that communication with PeopleSoft regarding this project is linked to the State's customer number.

3.2 HRMS Rollout

PeopleSoft HR and Benefits modules are managed by the State Personnel Department. Rollouts begin with the completion of the functional training module.

3.3 Procurement Rollout

PeopleSoft Purchasing module is managed by IDOA-Procurement Division. Rollouts begin with the completion of the functional training module.

3.4 Financials Rollout

PeopleSoft Financials modules are managed by IDOA-Division of Information Technology (DoIT.) State agencies can choose the GMIS Team or any of the 4 outside vendors as their implementation partners. Implementation requires that the state agencies and their implementation partners to compare their processes with the PeopleSoft Financial modules to determine a direct fit, the need for internal Business Process Reengineering their processes, or using the Change Control Process to determine if changes would benefit the state.

Chapter 4. Development Standards

The following sections detail procedures and standards for developing and modifying PeopleSoft objects, organized by object type. The intent for these standards is to help prepare for future upgrades, enhancements, and problem resolution. Please refer to the associated PeopleTools reference guide for more complete instructions on using/modifying a particular PeopleSoft object.

4.1 Development Process

Repeated throughout this section is a brief outline of the Development Process for each type of object. The key components that apply to every new development or modification project are:

1. Develop or modify ONLY in the FSDEV/HRDEV database.
2. Document changes
3. Following successful testing in the FSDEV/HRDEV database, submit a Migration Request (use the Issues database) to have the object moved by the Change Control Administrator to FSQA/HRQA for system integration testing.

   For more information on Change Control and the migration process, see Chapter 7 of these Standards and Procedures.
4. Following successful system testing in the FSQA/HRQA environment submit a Migration Request (use the Issues database) to have the object moved by the Change Control Administrator to the production environment, FSPRD or HRPRD, and the training database, FSTRN or HRDVL.

4.2 Module Identifiers

The following module identifiers are used as part of the naming convention for various internal and external objects:

Application	Identifier	Module
HRMS	HR	Human Resources
	BN or BA	Benefits Administration
	PY	Payroll
	TL	Time & Labor
Financials	AM	Asset Management
	AP	Accounts Payable
	AR	Accounts Receivable
	BD	Budgets
	BI	Billing
	GL	General Ledger
	GM	Grants Management
	IN	Inventory
	OM	Order Management
	PO	Purchasing
	PC	Projects Project Costing

4.3 Projects

For objects that need to be migrated from one instance to another that is a part of a fix or customization, follow these naming standards:

- For fixes delivered by PeopleSoft, the project name should be identical to the name of the PeopleSoft fix.
- For customized objects, the project name should adhere to the GMIS naming standard of SOIaa**** as follows:

SOI Initial 3 characters to indicated a State of Indiana modification
aa PeopleSoft module identifier (for example, HR, GL, AP, PO, etc.)
**** The "GMIS Issues Database" issue number

4.4 Record & Field Definitions

The terms ***record*** and ***table*** are used throughout PeopleSoft applications and are interchangeable. The Application Designer is used to create record definitions for every user-defined record or table in the system. The terminology is different in SQL. DBMS Structures known as tables and records in PeopleSoft are all called ***tables*** in SQL. Tables contain ***rows*** that are individual data records. Rows contain ***columns*** that are called fields in PeopleSoft.

4.4.1 Naming Conventions

Record and field names should follow PeopleSoft standard abbreviations to lend consistency throughout the application design. For a complete list of PeopleSoft Naming conventions and abbreviations, please refer to PeopleSoft's document, Development Tools, "PeopleSoft Naming Conventions".
Record Prefix – preface all State of Indiana-created records be with 'SOI_'.
Record Suffix – all State of Indiana developed tables should have a suffix following the PeopleSoft naming conventions:

Suffix	Record Type
_DVW	dynamic views
_FUNCLIB_XXX	function library
_SBR	subrecords
_SBP	sub-panel records
_SRCH	search record
_TBL	edit and prompt tables
_TMP	temporary records
_VW	views
_QVW	query views
_WRK	tables that are updated as a result of a process (i.e., to hold output from one SQR to use as input to another SQR

Tables –name all new State of Indiana tables identically to the record name (using *PeopleTools, Application Designer, and Change Record Type*). Resulting tables will have an 'SOI_' prefix.
Fields – preface all new State of Indiana specific fields prefaced with 'SOI_', even if the record was shipped with the PeopleSoft software. This will prevent overlap with new fields delivered in an upgrade to a new version of PeopleSoft.

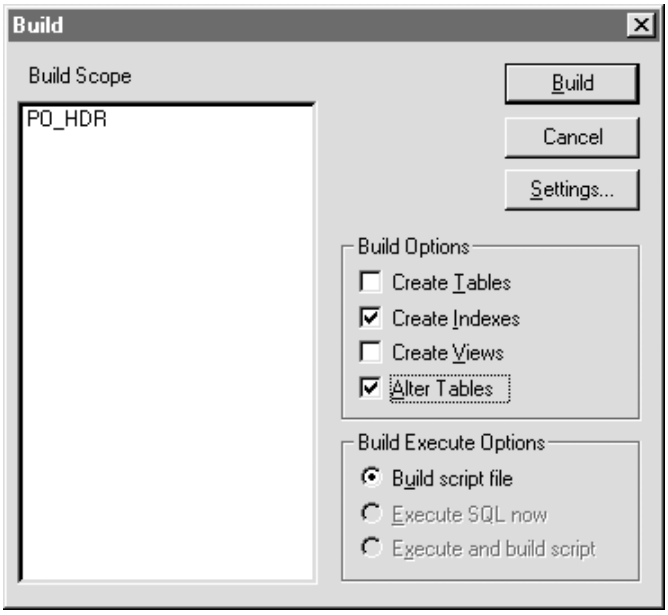
4.4.2 Documentation

Use the Record Properties dialog box (File, Object Properties) to document changes to record definitions. Comments should indicate the name of the table, brief description, and a log of

adjustments made to the record. The log includes a modification number, date, description, and the Name of the developer.
If changes to PeopleCode are made, reference the PeopleCode program in the description using the syntax PC-XXX, where XXX refers to the standard 3-digit PeopleCode abbreviation. For example, PC-SED would refer to the Save Edit PeopleCode program.

4.4.3 Development Process

1. Develop/modify record in the FSDEV/HRDEV database.
2. Document changes as described above in the Record Properties dialog box.
3. For new records, run Create Table and Execute SQL now… from the Build, Current Object menu of Application Designer.
4. For modified records, create a SQL script file for each record and forward to the DBA to be run (generally after production hours). Use the name of the record for the script filename. For example, ps_state_tax_tbl.sql.



5. Following successful testing of the record in the FSDEV/HRDEV database, submit a Migration Request (use the Issues database) to have the record moved by the Change Control Administrator to FSQA/HRQA for system integration testing.

   For more information on Change Control and the migration process, see Chapter 7 of these Standards and Procedures.
6. Following successful system testing of the table in the FSQA/HRQA, a similar migration will be made to the production environment, FSPRD or HRPRD database, The DBA will execute the script for creating the SQL Server table.

4.4.4 Notes and Other Considerations

4.4.4.1 Records

- If you rename a record or field, the change is also made automatically in PeopleCode. If you delete a record or field, the change is NOT automatically reflected in PeopleCode. You should manually delete all People Code references to the field or record. (Note: Do

this PRIOR to deleting or changing the record or field.) To find out where a field is used in PeopleCode, you need to look at two cross-reference reports. First look at report XRFFLRC (*Cross Reference -- Fields and Records*) to see which records contain the field. Than look at report XRFFLPC (*Cross Reference -- Fields Referenced by PeopleCode Programs*) to see if the target record and field are referenced in PeopleCode.

- Do not SQL Table-create the following types of record definitions:
  1. Views or search records (suffixes _VW and _SRCH). Search records really are views; a view is not a physical table, and should not become one.
  2. The DERIVED record. This special working storage record is not a physical table.
  3. The EMPLOYEES record is a special table used for reporting purposes and is created and refreshed via an SQR.
  4. The JOB record is very important and very delicate. Treat it with extreme care if you need to modify it.

4.4.4.2 Views

- All views should be created through PeopleSoft and adhere to naming standards. This is true even if the view will not be used to access information through PeopleSoft.
- If an Alternate Key is designated on a field in a VIEW Record Definition the same designation must be made on the associated table Record Definition (i.e., *_TBL).

4.4.4.3 Derived Records

- The DERIVED record is special. Think of it as working storage for your current session. It is used for temporary variables that do not need to be stored and for totals fields that should be dynamically derived to always be up to date.
- Do not add derived fields to the PeopleSoft Derived record definitions (i.e., DERIVESOI_BEN, DERIVESOI_PAY, DERIVESOI_HR. New derived records will be created for this purpose: DERIVESOI_BEN_A, DERIVESOI_PAY_A.) This guideline will simplify the upgrade process.
- Do not add new Functions to the PeopleSoft Function record definitions (i.e., FUNCTLIG_HR, FUNCLIB_PAY). New Funclib record definitions will be created for this purpose: FUNCLIB_HR_A, FUNCLIB_PAY_A. This guideline will simplify the upgrade process.
- When you need to create a totaling field, put it on the derived record. Look at the DERIVED record to see what PeopleCode needs to be added for the field.

4.4.4.4 Xlattable

- The Translate Table (PSXLATTABLE) is a system edit table that stores codes and descriptions for fields that do not warrant a separate table of their own. Fields on the Translate Table should be non-key fields. Be sure to turn on the Translate Table check box in Application Designer.
- A field that has only two values such as yes/no or true/false should be specified as a YES/NO field in Application Designer. Do not put it on the Translate Table.
- To highlight changes to translate table made by The State of Indiana, use an effective date of 01/02/1900.

4.4.4.5 Fields

- In Application Designer, if you define a field as required, it means the field cannot be blank or equal to zero. All numeric or signed numeric fields automatically default to zero, you do not need to specify the zero. To SQL, *required* means the field cannot be null.
- New Fields must be added to the end of the record definition if at all possible. This practice simplifies the altering of tables in common database environments.
- If you need to change a field type from number to signed number or vice versa, you can do it using the Change...Type in Application Designer. Any other changes to field type, such as number to character, must be done the hard way--delete the number field and add the character field. If you use the same field name for both fields, you will have to save the record after deleting the old field and before adding the new field.
- Use DESCRLONG type fields sparingly or not at all. These are tough to move.
- Do not change PeopleSoft Field Lengths unless absolutely necessary. A database SQL script file containing DROP, CREATE, LOAD, etc. database commands would need to be produced, maintained, and upgraded for each table in which the modified field appears.
- Do not designate record fields as LIST items unless absolutely necessary. When LIST is checked for a field that field will be stored and maintained in all primary and alternate indexes associated with the record. This action not only increases the storage space required for each index but also degrades performance in common database environments. Adding new LIST fields to high volume tables (i.e., PERSONAL_DATA) should be scrutinized carefully.
- If there is a standard PS field you want to remove from a record or panel, leave the record as it is and take the field off the panel. Be sure to examine the panel for related display fields, invisible fields used for PeopleCode related to the removed field, etc. You need to clean up these anomalies or the panel may not work properly.
- EFFDT has special characteristics:

a. When you use F7 (Insert) to insert a new effective-dated record on a panel, the system automatically copies the data from the prior record to the current record, to give you a starting point for the new records.
b. It affects which records you can view and/or update depending on which update action you choose (Update/Display, Update/Display All, Correction).
c. All Effective Dates should be keyed/Descending.

4.5 Panel Definitions

4.5.1 Naming Conventions

All State of Indiana created panels should be prefaced with ‘SOI’.

4.5.2 Documentation

PeopleSoft does not allow for internal documentation for panels. Panel documentation will be performed in the Issues database outside the PeopleSoft application.

4.5.3 Development Process

Development and/or modifications occur only in the development environments: FSDEV and HRDEV. See Chapter 7: Change Control Standards for additional details on the development, testing, and migration procedures.

4.5.4 Notes and Other Considerations

If an existing panel is modified, use 'SAVE AS' to create a 'prior version' of the existing panel. For example, 'SAVE AS' panel JOURNAL_ENTRY1 to JOURNAL_ENTRY1_01 where '_01' is the version.

In PeopleSoft terminology, fields associated with panels have different levels. Level 0 fields are above all scroll bars on a panel. Level 1 fields are controlled by the first scroll bar. Level 2 fields are controlled by the second scroll bar and so on. On a panel with multiple scroll bars, each level should use a different record, except that Levels 0 and 1 can sometimes use the same record (i.e., only in cases where there is EFFDT).

When you design a panel, the key fields from the dialog box should be placed at the top of the panel (level 0) as display-only. The search record determines which fields are displayed in the dialog box preceding a panel.

A scroll bar controls all fields below it in the order list, except for another scroll bar or a push-button. Thus, only another scroll bar or a push-button can turn off the effect of a scroll bar.

A field from another record can be displayed on a panel, but you must relate it to another field on the panel. Mark the control field as a *Display Control Field* and the related field as a *Related Display Field*. For example, if DEPTID is on a panel and you want to also display DEPTNAME from the DEPT_TBL, you would mark DEPTID as the *Display Control Field* and DEPTNAME as the *Related Display Field* (related to DEPTID).

If you delete a field from a record, remember to delete it from the panel.

Pay close attention to radio buttons on new or modified panels. Changes to the underlying values in the prompt table or translate table will require modifications to all panels on which the radio buttons appear.

Panels based on Record Definition VIEWS (i.e., *_VW) must contain display only fields.

To ensure that the organizational security parameters are enforced for all related panels, new panels that access sensitive data like employee data should use one of the search views provided by PeopleSoft as the Search Record. Examples of these search views are:

PERSONAL_SRCH
EMPLOYMENT_SRCH
EMPLOYEE_CO_SRCH

Employee Record # (EMPL_RCD#) is part of the key to many records in PS Financials and HRMS. The field is invisible on all panels unless you turn on the Multi-Job check box on the PeopleTools Options Panel.

If employees can only have one job at a time, you should leave the Multi-Job check box turned off. This means that EMPL_RCD# for each employee will be zero, which is as it should be.

Note: When any existing PeopleSoft object is modified, the original object should be saved under its original name with a suffix of _01 to indicate that it is an archive. Use the 'SAVE AS' feature within PeopleSoft.

4.6 PeopleCode

PeopleCode development will usually occur in conjunction with record and/or panel development and modification. PeopleCode programs are triggered by either an Application Processor event or by

a user action. The programs can be accessed through Application Designer, Panel Designer, or Menu Designer.

4.6.1 Naming Conventions

PeopleCode program names follow the following format:

recordname.fieldname.event_type.

By following naming conventions for Record and Field definitions, PeopleCode programs will also follow naming conventions by default.

4.6.2 Coding Standards

The PeopleCode Editor automatically formats the PeopleCode programs so there is no need to format code.
No PeopleCode should be modified or deleted. Instead, if the functionality is to be changed or not performed, comment the code using the documentation standards below.

4.6.3 Documentation

Document modifications to PeopleCode via comments surrounding the modified code. The record definition descriptive text box should also be updated to reference the changes.

```
/* SOI-FS Begin 06/04/1999 Mark Walker SOIPO340          */
/* Replaced get_last_id function with new parameters     */
/*   get_last_id(&FIELD_SIZE, BUSINESS_UNIT, &PO_ID);    */
/*                                                       */
     get_last_id(&FIELD_SIZE, BUSINESS_UNIT, &PO_ID,
&SOI_PO_ID_BY);
/*                                                       */
/* SOI-FS End   06/04/1999 Mark Walker SOIPO340          */
```

Naming convention uses GMIS Issues Database ID Copy original code.

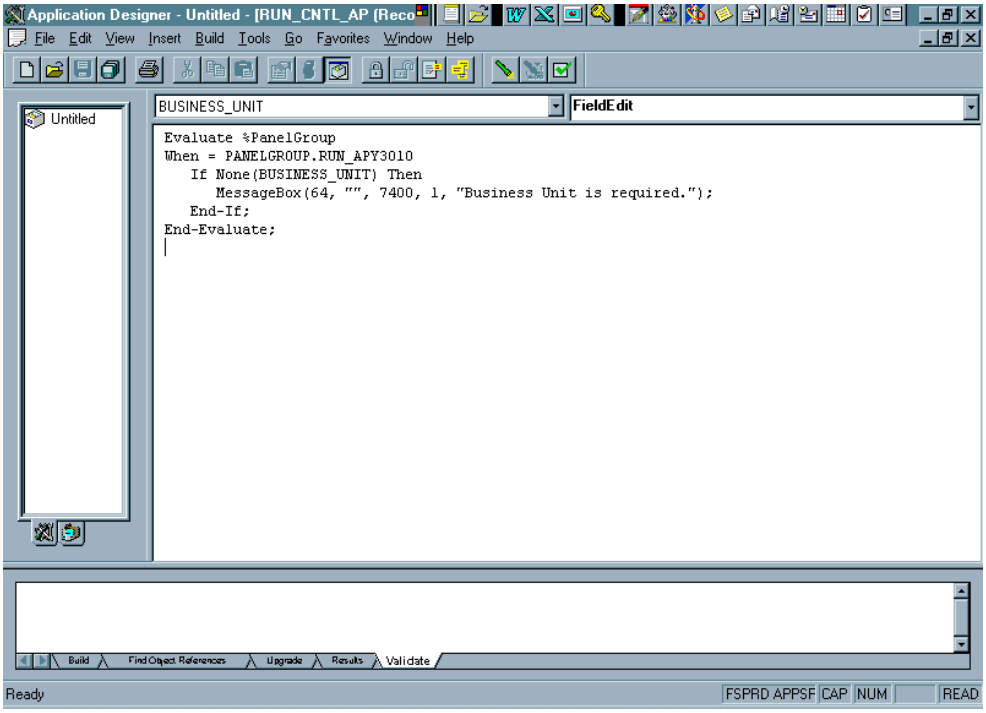
1. Make modifications to copy only.
2. Comment original code.
3. Document changes

4.6.4 Development Process

Follow the development process for record and panel definitions. PeopleCode modifications do not require SQL changes.

4.6.5 Notes and Other Considerations

Preface PeopleCode changes with ‘SOI’. This provides what should be a unique text string to use when searching PeopleCode. Use it to locate all modified code from the Edit, Find in PeopleCode dialog box in Application Designer.
Do not initialize fields to hard-coded values in new or modified PeopleCode programs. The 'SetDefault()' function should be used instead.
The panel name (%panel) should govern the execution of all new or modified PeopleCode thereby avoiding unintentional execution. If one field from a record (except for related display fields) appears on the panel being processed by the Panel Processor all Row Level PeopleCode (i.e., Row Init, Save Edit, etc.) will execute automatically.
When coding PeopleCode on a Run Control record, surround the logic with an evaluate statement that forces the code to execute only when in the appropriate panel group. Otherwise, the code will fire for any panel group that references the record, whether the particular field is on the panel or not. This often results in inappropriate messages displayed to the user. For example:



RowSelect PeopleCode can only reference the field on which the PeopleCode is placed. If other fields need to be referenced the PeopleCode should be split among those fields that need to be referenced.
If a change is made to a SQLExec statement, copy the entire statement, comment out the original, and modify the copy.
SQLExec statements should not include the same bind variable (i.e., :1) more than once.

4.7 Queries

PeopleSoft supports both Public and Private Queries. The difference is visibility. Private Queries are visible only to the operator ID that created them; Public Queries are visible to all operators with appropriate security. Private queries are difficult for the GMIS Team to support.

4.7.1 Naming Conventions

Public Queries will follow a naming convention of SOIXX***as follows

SOI Initial 3 characters to indicated a State of Indiana Public Query
XX PeopleSoft module identifier
*** The next available sequential number for that module ID. The developer will search the existing Query names in the all application environments to determine the next available number.

Syntax: SOIaannn

SOI specifies State of Indiana SQR
aa application module code
nnn report type sequence number

When any existing PeopleSoft queries are modified, the original query should be saved under its original name with a numeric suffix (_01) to indicate that it is an archive. Opening up the query and selecting the Save As option does this. *Note that any crystal reports referencing the query must be updated also.*

4.8 Message Catalog

The Message Catalog is maintained in PeopleTools using the *Utilities* window.
Each Message Set is given a description and a short description. Each message created within a Message Set is assigned a Message Number and can be up to one hundred characters in length. A scrollable field is used to enter the message text. If the text of the message is changed in the Message Catalog, the text of the message will change when it is received on-line in PeopleSoft. New messages can be added to an existing Message Set by using a Row Insert (F7). PeopleCode automatically assigns the Message Number.
When errors are produced, an *Explain* push button is displayed with the message. Selecting the *Explain* push button displays a long description of the error. The explain text is also retrieved from the Message Catalog.
PeopleSoft reserves Message Set numbers under 20,000. If any messages are added or customized in Message Sets under 20,000, they will likely be overwritten during an upgrade. The customizations can be applied again after the upgrade if desired. When creating or modifying messages in the Message Catalog, it is better to create a new Message Set by selecting the action *Add Message Set.*
Message Sets 20,000 - 29,000 are available for use. These will not be overwritten during an upgrade.
The maximum number of messages within a Message Set is 32,767.
All of the messages in the Message Catalog can be printed out using the delivered SQR program TLSMSG.

4.8.1 Numbering Conventions

Reserved Message Sets for In-house developed applications:

PeopleSoft HRMS

20,000-20,99	Human Resources Message Sets
21,000-21,999	
22,000,22,999	
23,000-23,999	Benefits Message Sets
24,000-24,999	
25,000-25,999	Time & Labor Message Sets
26,000-26,999	Payroll Message Sets
27,000-27,999	
28,000-28,999	

PeopleSoft Financials

20,000-20,999	Financials Message Sets
21,000-21,999	Reserved
22,000-22,99	General Ledger Message Sets
23,000-23,999	Projects Message Sets
24,000-24999	Accounts Payable Message Sets
25,000-25,999	Inventory Message Sets
26,000-26,999	Purchase Order Message Sets
27,000-27,999	Asset Management Message Sets
28,000-29,000	Accounts Receivable & Billings Message Sets
	Budgets Message Sets

4.8.2 Notes and Other Considerations

none yet.

4.9 Other PeopleTools Objects

Other PeopleSoft tools objects include:

Help
Mass Data Change
Menu
Process Scheduler
Security
Tree

4.9.1 Naming Conventions

Where applicable, State of Indiana developed objects should be prefaced with 'SOI'

4.9.2 Documentation

PeopleSoft does not allow internal documentation for most tools therefore it is important that each application be documented externally in the Issues database.
For any other object that is not complete in and of itself, like PeopleCode, it should be required that any changes be highlighted via comments. For instance:

```
/*********************************************/
/* ----- begin, MM/DD/YYYY, Developer, SOI####
/*Brief description of change
     changed code here
/* -----end, MM/DD/YYYY
/* *********************************************/
```

In cases where there is one location for comments:

```
Modifications Log
Date                By                                  Description
02/05/1998    Developer Name      SOI####, new object
02/20/1998    Developer Name      SOI####, changed sort order
```

4.9.3 Development Process

Development and/or modifications occur only in the development environments: FSDEV and HRDEV. See Chapter 7: Change Control Standards for additional details on the development, testing, and migration procedures.
Do not delete PeopleSoft menu items. The security administrator will activate/de-activate these items via operator and/or/ class security.

4.10 Crystal Reports

Crystal Reports is a Seagate software product used by PeopleSoft in conjunction with the PS Query tool to generate reports. Generally, Crystal reports are run on demand by functional users and for relatively simple reports or for reports that require special formatting.

4.10.1 Naming Conventions

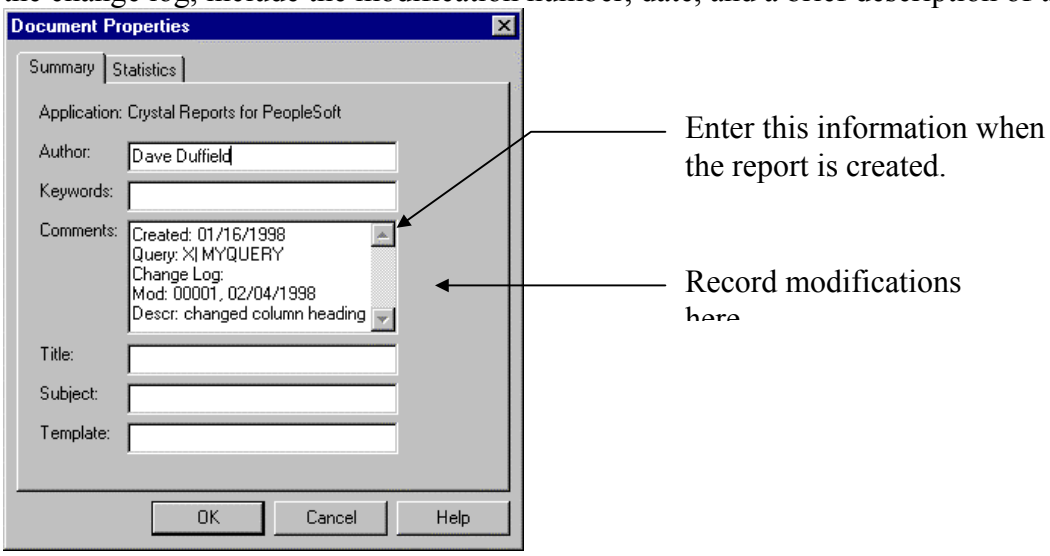
Crystal reports should follow the same naming convention as SQR programs. See the application code table in the SQR/SQC Development Standards section.
Syntax: SOIaannn.rpt

SOI	specifies State of Indiana SQR
aa	application module code
nnn	report type sequence number
rpt	standard crystal report extension

The first eight characters of the *.RPT file must match the first eight characters of the associated query to direct the output of a query to the crystal report.
Query name syntax: <crystal name without suffix>-<Report Name>. There should be no spaces around the hyphen.

4.10.2 Documentation

Crystal provides a location for documenting file information. Select *File, Summary Info* to open the Document Properties dialog. Use the Comments text box to document modifications to the report. In the change log, include the modification number, date, and a brief description of the modification.



4.10.3 Output Standards

Where appropriate, Crystal report heading should follow the general format of SQR report headings. Column headings should:

- be mixed case in the same font/size as the report detail
- be BOLD
- include a bottom border
- be justified to match data justification
- use abbreviations consistent with other reports and panels
- Subtotals should be separated by a single line, grand totals by a double line.

4.10.4 Development Process

7. There may be two components to the development or modification of Crystal reports: Developing both the report itself as well as the PS Query upon which the Crystal report will be based. Just as with any other development activity, initial work will be done in the FSDEV/HRDEV environment.
8. If available, copy a model Crystal report and PS Query from the production directory on the LAN file server to the appropriate FSDEV/HRDEV directory using the naming convention identified above for the file.
9. Develop/Modify the query and/or report.
10. Successfully unit test in FSDEV/HRDEV.

11. Following successful testing in the FSDEV/HRDEV database, submit a Migration Request (use the Issues database) to have the query and report moved by the Change Control Administrator to FSQA/FSQA directory for system integration testing.

    For more information on Change Control and the migration process, see Chapter 7 of these Standards and Procedures.
12. Following successful system testing in FSQA/HRQA, a similar migration will be made to the production environment, FSPRD or HRPRD.

4.11 SQR/SQC

SQR is a procedural 4GL report generator for SQL-based relational databases. PeopleSoft uses SQR programs for reporting as well as database manipulation. SQR programs are created and modified in any text editor and reside on the LAN file server. This allows the option of executing an SQR on the application server (Server SQR) or the client workstation (Client SQR). This requires storing identical SQR programs in two different locations and selecting the appropriate execution option within the PeopleSoft Process Scheduler.
There are a number of file types associated with SQR programs as described below.

Extension	Description
.LIS	The SQR report file. The filename defaults to the name of the SQR.
.LOG	Contains all information such as errors and display statements that is output to the terminal during the execution of the SQR program. File SQR.LOG will be created when the SQR is run on the workstation or NT server. SQR.LOG is overwritten each time an SQR program is executed in the Window environment.
.MAX	ALLMAXES.MAX is a file used to increase default SQR memory allocation parameters. This file is specified with the -M flag.
.SQC	Contains common procedures called by multiple programs. Use #include 'SQCfilename' to include SQC in SQR program.
.SQR	Main SQR program.

4.11.1 Naming Conventions

SQR programs will follow a naming convention of SOIXX***as follows

SOI Initial 3 characters to indicated a State of Indiana modification
XX PeopleSoft module identifier listed in section 4.11.2.
*** The next available sequential number for that module ID. The developer will search the existing SQR names in the Development environment (FSDEV or HRDEV) to determine the next available number.

HRMS

HR	Benefits	Payroll	Time & Labor
SOIHR***	SOIBN***	SOIPR***	SOITL***

Financials

Asset Management	Billing	Inventory	Purchasing

SOIAM***	SOIBI***	SOIIN***	SOIPO***

Accounts Payable	Budgets	Order Management	Projects
SOIHR***	SOIHR***	SOIHR***	SOIHR***

Accounts Receivable	General Ledger		
SOIAR***	SOIGL***		

4.11.2 Coding Standards

Standard, consistent coding practices make a program easier to interpret and debug. The following styles should be used when creating a new SQR:

- Comment block with program name, function, prompts, tables, and modifications log.
- Section ordering should follow:

d. ownership block
e. general defines
f. setup
g. Begin-Report
h. Begin-Heading
i. functions - general functions followed by support routines
j. includes

- Procedure names should follow Verb-Noun format as appropriate.
- Procedures should include a header block and include the procedure name and a description of the procedure.
- Indentation standard is four (4) characters.
- Comments for code should be placed on separate lines above the lines of code.
- Precede each section and procedure with two blank lines.

A sample SQR program can be found in Appendix B.
PeopleSoft documents “SQR Style Guide” and “SQR Tips & Techniques” should be referenced for additional information. PeopleSoft document “PeopleTools SQR Services (SQCs)” outlines common procedures in the delivered SQCs.

4.11.3 Documentation

Add a comment box to the top of the SQR. The comments should indicate the name of the SQR, the title (if the SQR is a report), brief description, and a log of adjustments made to the SQR. The log includes an item number, date, and description. For example:

```
!-----------------------------------------------------------------!
! Report Name   : SOIHR001.SQR - Employee Reviews                  !
! Author        : Charles Schouman                                !
! Creation Date : 01/16/1998                                      !
!-----------------------------------------------------------------!
! Program Desc: This report lists employee reviews due within the !
!               next six months       .                           !
!-----------------------------------------------------------------!
! Prompts:      Location, Department                              !
!-----------------------------------------------------------------!
! Sort Options: Location, Department, Manager, Employee.          !
!-----------------------------------------------------------------!
! Tables Referenced:                                              !
!   SELECT      : PS_EMPLOYEES                                    !
!                 PS_EMPLOYEE_REVIEW                            !
!-----------------------------------------------------------------!
! Modifications :                                                 !
! Ver Date       By            Description                        !
! --- ---------- ------------- -----------------------------------!
!  01 01/16/1998 C. Schouman   new report                         !
!  02 02/03/1998 C. Schouman   SOIHR1037:revised select criteria  !
!-----------------------------------------------------------------!
```

Code modification should also be documented within the body of the program. Surround modifications with comments including the modification number, date, and a brief description to that particular change. Do not delete any code, comment it out. For example:

```
! ----- begin 02/04/1998, C. Schouman, SOIHR1037.
! following if statement no longer needed
!if &a.empl)status <> 'A'
!    goto skip-rec
!end-if
! ----- end 02/04/1998.
```

Note that this state-developed SQR gets its name of SOIHR001.SQR from the Naming Convention detailed previously (it was the first of the state-developed sequentially numbered) while the modification within this SQR gets its name from the "GMIS Issue Number" that it is tied to (in this case Issue # 1037).

A version number should be established for each SQR using a defined constant at the top of the program. The version number will be appended to the $ReportID field and displayed in the header of the report. For example:

```
#define version '01'
  :
  :
Init-Report
move 'SOIHR001.SQR-' to $ReportID
concat {version} with $ReportID
```

The version number should be incremented for each new version of the program moved into production.

4.11.4 Output Standards

SQR programs can generate two types of output files: reports and logs. Reports are generally the primary deliverable of an SQR program, they fulfill a reporting requirement. Log files are also created whenever an SQR program is executed. Log files are helpful in diagnosis and problem resolution - they can show program progress and display key variable values.

4.11.4.1 Reports

Report headings should utilize one of the STDHDG##.SQC include files to generate consistent, standardized report headings.

4.11.4.2 Logs

List program name, begin time, key milestone paragraphs, key variables or counts as appropriate, error/warning messages, and the end-time. The SHOW command is most versatile for displaying constants and variables in the same command, Be careful when displaying information from within a loop or frequently called procedure.

4.11.5 Development Process

13. Copy model SQR from the production SQR directory on the LAN file server to the appropriate FSDEV/HRDEV directory using the naming convention identified above for the file.
14. Develop/Modify the SQR.
15. Successfully unit test in FSDEV/HRDEV.
16. Following successful testing of the record in the FSDEV/HRDEV database, submit a Migration Request (use the Issues database) to have the SQR moved by the Change Control Administrator to FSQA/FSQA directory for system integration testing.
17. For more information on Change Control and the migration process, see Chapter 7 of these Standards and Procedures.
18. Following successful system testing of the SQR in FSQA/HRQA, submit a Migration Request (use the Issues database) to have the SQR moved by the Change Control Administrator to the production environment, FSPRD or HRPRD.
19. Also move, via FTP, the program to the SQR directory on the database server. Version control will be administered in the LAN directory structure, so there is no need to keep multiple versions of the program on the database server.

4.11.6 Notes and Other Considerations

- SQR programs must always be API aware in order to update the Process Scheduler properly.
- "ARRAY" processing is the preferred method for obtaining, manipulating, and reporting data from tables of less than 200 rows that will be used in subsequent processing of larger volume tables.
- Non-SQL lines are indented at least 2 characters.
- The order tables are referenced in SQL statements can have significant impact on performance. If you experience performance issues, review the SQL statement with a DBA for improvement suggestions.
- Reference PeopleSoft documents “SQR Style Guide” and “SQR Tips & Techniques” for additional information.

4.12 COBOL

It is the intent of the State of Indiana applications development team to avoid all COBOL modifications except for PeopleSoft-delivered changes with tax updates or fixes.

4.12.1 Naming Conventions

Follow the same naming convention as SQR programs.

4.12.2 Coding Standards

Follow the same coding standards as SQR programs.

4.12.3 Documentation

Follow the same documentation procedures and formats as SQR programs.

4.12.4 Development Process

Follow the same development process as SQR programs.
Move programs files into production from the PeopleSoft Development Projects Database.

4.12.5 Notes and Other Considerations

Be sure and compile and link-edit all Cobol programs on the database server after moving new or modified source

Chapter 5. Testing Standards

5.1 Introduction

This chapter discusses the various types of testing that are performed as part of the development and maintenance of the GMIS/PeopleSoft environment. References to various testing requirements will also be found in Chapter 3: Application Development as well as Chapter 7: Change Control.

5.2 Types of Testing

There are four general types of testing that are covered by this standard. In order of increasing complexity, they are:

5.2.1 Unit Test

A Unit Test targets a single component of the application such as a panel or a report. It is conducted by the developer as the creation or maintenance work proceeds and may be repeated a number of times as necessary. Other people, including users, may be involved at the discretion of the developer.

5.2.2 System Integration Test

This testing activity confirms the functionality of the single unit and its interaction with the other modules. This is generally "bottom up" testing from the point of the modification expanding through the rest of the related or impacted system components. This area covers the full range of possible test scenarios from Unit Tests all the way to User Acceptance Tests.

5.2.3 User Acceptance Testing

Here the users determine if the delivered functionality meets the requirements they provided originally. The user sign-off authorizes the move of the component from the Testing environment to Production.

5.2.4 Volume / Load / Stress Testing

During major system changes or in the event of major hardware changes, just testing for functional correctness may not be enough. It may also be necessary to test the effect on the operation of the system of production levels of activity, i.e. many, perhaps hundreds, of users entering data into the system at the same time. This will be done using whatever tool set DOIT has selected for capturing data, executing the transactions and analyzing the results. The current tools for use are listed in Appendix ??.

5.3 Test Plans

Nearly all development and maintenance activities or projects should include a Test Plan with many of these components:

Test Overview - The type of test to be performed (see 5.2 above) and the elements (panels, programs, modules or entire systems) to be tested.

Test Process – The selection and organization of the test transactions/data needed to perform the test. This will include the selection of any tools to be used for the recording and playback of scripts, the selection of other resources, both personnel and hardware, if data is to be entered manually during the test.

Tools to be Utilized – If electronic tools are to be used, usually to perform a stress test on a complete system, the tools and any parameters used with them should be noted.

Resource Requirements – The resources, both in personnel and hardware, that will be needed to perform the test and an estimate of the time required.

Roles and Responsibilities - The primary people involved in preparing for and conducting the test and their assigned tasks.

Test Scripts – If scripts are used, a listing of the functions/transactions that need to be tested and the format to be used in preparing the scripts.

Measurement of Test Results - If electronic tools are used, this section should specify the electronic reporting and monitoring functions that will be used.

Error Processing – A log of errors occurring during the test should be kept. The corrections to the problems should be noted on the log, as the problems are resolved.

Status Reporting – A final report, perhaps following various interim reports, that specifies the final success or failure of the test and the proposed next step (depending on the level of the testing and the result).

5.4 "Application Coverage" of the Testing

Since time and staff resources are frequently expressed as limitations on testing, it's important for the user and the developer to identify those components that are of the greatest risk for either critical business function or more likely to fail based on experience with the application. The retention of previous test scripts and the use of an automated testing tool will help in expanding the coverage available for all testing processes.

5.5 Testing Tools

Testing tools will be utilized whenever needed and should include facilities for:

- Recording and executing test scripts
- Generating volumes of transactions from scripts

Tools for analysis of application coverage -- how much of the application program logic has actually been exercised in the test.

5.6 Test Management

The testing process will also be managed to ensure that

- Appropriate testing was performed
- Positive and negative results were recorded and any problems resolved
- Business users and technical staff sign-off on the successful completion of the testing

5.7 Volume Testing

5.7.1 Test Overview

Volume testing will be performed on the PeopleSoft system to determine the system's ability to process data, interface with the user and maintain user acceptable response times. Volume Testing will be accomplished using a pre-defined set of tools to collect and monitor system performance, generate batch-processing activity and simulate users interfacing with PeopleSoft applications.

5.7.2 Project Assumptions

The success of the project will be based upon the following key factors:

- A stable testing environment
- Access to the available testing tools
- Learning curve associated with usage of the testing tools if needed

5.7.3 Test Process

The Volume Test process will involve the following:

Specification of the testing methodology:

- Development of testing scenarios
- Development and testing of the script templates
- Development of documented procedures
- Identification of resources needed to conduct the testing
- Configuring the testing tools to the current environment

System set up for volume testing

Volume testing of system

Documentation of the end results

Compilation of the test metrics

Creation and maintenance of an issues log

Problem Reports (generated as a result of testing)

5.7.4 Role and Responsibilities

5.7.4.1 Project Lead

Ensure delivered to schedule, budget & quality

Regularly review Testing progress

Manage issues/risks relating to System Test Team

Provide resources necessary for completing system test

5.7.4.2 Test Planner

Produce High Level and Detailed Test Conditions

Produce Expected Results

Report progress at regular status reporting meetings

Co-ordinate review & signoff Test Conditions

Manage individual test cycles & resolve tester queries/problems

Ensure test systems outages/problems are reported immediately and followed up

Technical Support

Provide support for hardware requirements

Provide support for Test software

5.7.4.3 DBA

Provide and support Test Databases

Testing Scripts

These scripts will reflect the actual processing done by a typical end user within the application. The scripts will be developed by the end users and reviewed by the technical team for accuracy.

5.7.5 Scripting Standards

The following information will be required when building a testing script:

- Test Name
- Concise objective should be defined
- Direct navigation to the process to be tested
- Input of the correct information to produce known results
- Testing Scenarios
- Tests will be conducted to reflect actual processes that will be carried out routinely by typical end users.

5.7.6 Measurement of Test Results

Measurements will be taken for performance analysis of the system to determine which processes are the most resource intensive in order to identify any bottlenecks that might be present. The areas of the system that will be specifically targeted during the testing process are:

- The Client
- Application Server
- Network

5.7.7 Database

Measurements will include the actual processing time for a given set of processes against a standard benchmark. The benchmark will comprise of the execution time for the process as well as benchmarks for resource utilization (CPU Usage etc). An example is illustrated below.

Number of Users	Name of Process	Processing Time	Database	CPU Usage
10	Applicant Hire	1.5 Minutes	HRDVL75	50 %

5.7.8 Error Processing

Actual results will be measured against expected results in order to eliminate the probability of errors. Errors that are present will be recorded as they are detected using forms for error reporting. Errors will be categorized as follows based upon the nature of their severity.

- Category A - Serious errors preventing the volume test for a particular function
- Category B - Errors relating to missing data
- Category C - Errors that are minor in nature that do not prevent or hinder functionality

5.7.9 Error Resolution

The turnaround time for error resolutions will be based upon the severity and nature of the error. Errors categorized as Category A should be turned around within 1 day while Category B and Category C should have turn around times of 2 and 3 days respectively.

5.7.10 Network Performance

Network performance will be gauged to determine the total network utilization by the test processes for comparison reports in order to see the processes the most resource intensive. This will be achieved by using any currently available network performance measurement tools.

5.7.11 Database Performance

The speed with which the SQL (Select, Insert, Update and Delete) is executed on the database for each process needs to be measured. This can be done using the available Platinum tools. The metrics will then be used to determine any areas of the application that might need tuning in terms of database performance.

5.7.12 Status Reporting

Test preparation and testing progress will be formally reported during the weekly Infrastructure Status Meeting.

5.8 User Acceptance Test

5.8.1 Test Overview

Acceptance testing will follow all Unit and System Integration testing. Acceptance testing can range from a full system wide test to the testing of a specific subsystem. The purpose is to verify to the customers satisfaction, and usually using the customer's people to do the test, that all changes and/or new features fully meet the specifications that were agreed on in the planning phase of the project. If the acceptance test is successfully completed, the customer will 'sign off' on the system as ready to move into production.

5.8.2 Project Assumptions

The success of the test will be based on the following key factor:

- That all new or changed system functions work as specified in the planning documents and that no other system functions have been inadvertently changed.
- Test Process
- Roles and Responsibilities
- Testing Scripts
- Measurement of Test Results
- Error Processing

5.9 System Integration Test

5.9.1 Test Overview

This level of testing will usually follow one or more successful Unit Tests. It will test the interaction of the new or changed unit(s) with the other (unchanged) parts of the whole system. This test will usually be conducted by manual data entry by the users who normally do these functions.

5.9.2 Project Assumptions

The success of the test will be based on the following key factor:

- That the list of all interactions to be tested is complete.
- Test Process

The System Integration Test will involve the following:

- Development of a comprehensive list of functions/transactions/batch processes to test.
- Selection of personnel familiar with these activities to do the testing.
- Selection of the specific activities to be tested, including the transactions, the document ID to be worked on (if already in the system) or the documents/reports/etc. to be created.
- Identification of any procedures that need to be modified as a result of the change or addition to the system. Including a tentative revised version to be used in the testing.
- Documentation of the expected results of the data entry and various processes run during the test. These will be compared to the actual results.
- Creation of an Issues log to record any problems that arise during the test.

5.9.3 Roles and Responsibilities

The size and complexity of system integration tests can vary widely from the very small, just a little above a Unit Test, to those that are almost a system wide test. Similarly, the resources needed to set up and run the test will vary. At the low end, the developer making the changes can, with the help of one or more testers from the client agency, set up, run and evaluate the results. At the high end, a structure similar to that for a volume test may be needed. It is up to the developer and his/her manager to select the appropriate level.

5.9.4 Testing Scripts

True test scripts, recorded transactions that can be used by various tools to simulate various levels of activity, will usually not be used for system integration testing. If the selection of items to be tested (see Test Process above) is comprehensive there is not usually a need to process large volumes.

5.9.5 Measurement of Test Results

At this level of testing, the measurement of test results will usually take the form of noting any system generated error messages and comparing the actual and expected results.

5.9.6 Error Processing

Any errors or unexpected results will be included in the documents of the change where they can be referenced for correction. Any errors will result in an additional round of testing.

5.10 Unit Testing

5.10.1 Test Overview

Unit testing is the simplest level of testing. It involves testing only one panel or report or batch process and does not require interaction with other parts of the system. Unit Testing will normally be run several times, often testing each step of the change one at a time. For this reason it requires the least amount of resources and documentation of all the testing levels.

5.10.2 Project Assumptions

The success of the test will be that the results of the test match the expected values.

5.10.3 Test Process

The Unit Test will involve the following:

- Development of a comprehensive list of functions to test.
- Selection of the specific activities to be tested, including the transactions, the document ID to be worked on (if already in the system) or the documents/reports/etc. to be created.
- Identification of any procedures that need to be modified as a result of the change or addition to the system. Including a tentative revised version to be used in the testing.
- Documentation of the expected results of the data entry and various processes run during the test.

5.10.4 Roles and Responsibilities

In Unit Testing the developer, sometimes with the assistance of someone from the user community, performs all of the functions required to set up and run the test.

5.10.5 Testing Scripts

Testing will usually consist of a single transaction/process to be tested.

5.10.6 Measurement of Testing Results

At this level of testing, the measurement of test results will usually take the form of noting any system generated error messages and comparing the actual and expected results.

5.10.7 Error Processing

Any errors or unexpected results will be included in the documents of the change where they can be referenced for correction. Any errors will result in an additional round of testing.

Chapter 6. System Maintenance Standards (Fix-Updates/Upgrades)

6.1 General Process

PeopleSoft continuously issues fixes to their application software, publishes them weekly on their Internet site, and periodically bundles them into product updates. Several PeopleSoft documents on this topic are referenced in Appendix F, GMIS Issues Database Guide.

Although the recommended and sometimes "required" PeopleSoft procedures for applying Fix/Updates changes from time-to-time, the State's procedure is to apply only those of immediate need, and then wait for the product update for the general application of those remaining. Our regular process is to:

1. Retrieve the relevant fix/updates from PeopleSoft Customer Connection each week (usually Monday) as they are posted
2. Review these to determine whether to apply immediately or defer until the product update
   a. With the Functional Application staff to determine business need
   b. With the Technical staff to confirm potential impact on the various modules, prerequisites, and application mechanics
3. Apply to each database environment following PeopleSoft installation instructions and the GMIS change control procedures.

The following table provides more detail concerning the tasks involved and the roles of the staff in the effort.

GMIS

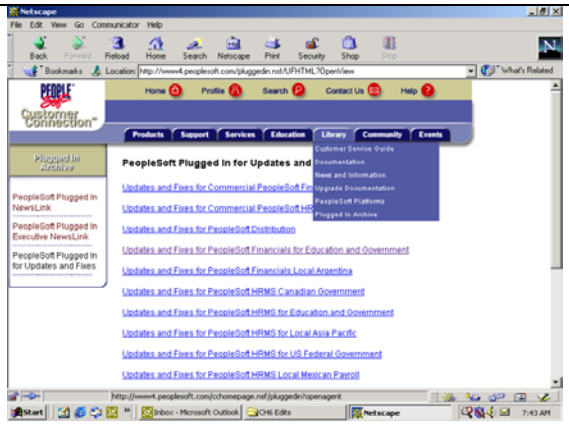
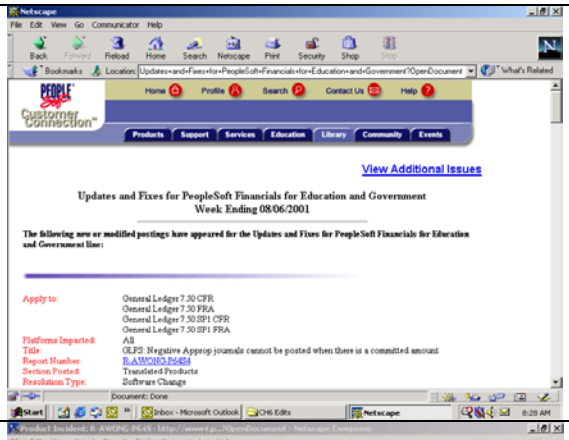
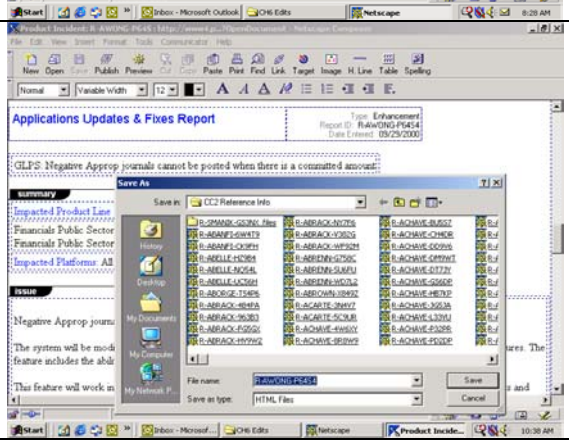
Fix / Update Roles

Draft for Discussion

	Task		1	2	3	4	5	6	7	8
Role										
A.	PeopleSoft		Issues weekly batch of Fixes and Updates							
B.	Project Documentation Analyst		Initiates Review: - Select fixes relevant to SOI installation - Enter into database - Run reports by module and distribute to Function Lead	Update Tracking Documentation						
C.	Functional Lead			Review for: - Functional impact - Priority applications				Functionally test and approve for move to xxPRD Update user documentation and training materials		Train or update staff as needed Begin production use
D.	Technical Lead				Review for: - Technical impact - PS prerequisites Assign to Tech Analyst to apply	Coordinate any environmental requirements	Walkthru for standards, etc.		Walkthru for standards, etc.	
E.	Fix-Update Specialist (Technical Analyst)					Apply to xxDMO, xxDev Perform initial testing	Create any needed database scripts Create any Change Control documentation	Review with Functional Lead at Pre-Test and Post-Test	Create database scripts as required Create any Change Control documentation	
F.	Change Control Administrator						If approved, migrate to xxQA		If approved, migrate to xxPRD (and xxDVL as needed)	
G.	Database Administrator						Perform any database backups, utilities as needed. Run database scripts if required.		Perform any database backups, utilities as needed. Run database scripts if required.	
H.	Security Administrator						Apply any security changes required in xxQA		Confirm with Functional Lead the authorized Security Classes and apply as required in xx PRD (and xxDVL)	
I.	Network Administrator					Apply any network related modifications				
J.	Operating System Administrator					Apply any O/S related modifications				
K.	Computer Operations Manager									

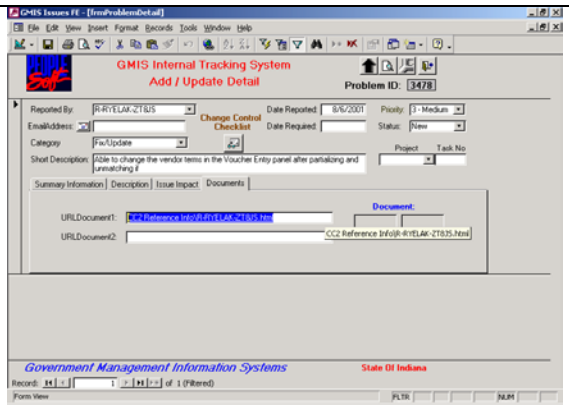
6.2 Retrieve Relevant Fix/Updates

Each week, usually Monday, PeopleSoft publishes a list of Fix/Updates. The GMIS Issues Database also includes the summary information from the PeopleSoft Customer Connection web site. Following are the mechanics for updating the Issues database.

The Documentation Analyst pulls the relevant Fix/Updates from PeopleSoft Customer Connection and records them in the GMIS Issues database. In Customer Connect, Navigate to > Library > Plugged In Archive > PeopleSoft Plugged In for Updates and Fixes > Updates and Fixes for PeopleSoft Financials for Education and Government. Note: Use Netscape.	
Our selection of "relevant" Fix/Updates is based on three factors: 1. The release is currently, or will be in the near future, be part of our implementation. For example, we include Asset Management but do not include Project Costing at this time. 2. The database platforms impacted are listed as “All” or “MS SQL Server”. 3. Not previously posted.	
In the screen in the previous step, right click on the Report Number: selected > Open Link in Composer > Save as: [Save in: CC2 Reference Info] > respond [no to all] on prompts to save duplicates [gif]; do not continue if the report number has been previously entered	

In the GMIS Issues database, select Create New Log Entry and enter the following into the screen using drop down selections, fields, and tabs:

1. Reported By: [e.g. Kraus, John]
2. Priority: [3-Medium]
3. Category: [Fix / Updates]
4. Product Line: [1 – Financials]
5. Product: [e.g. Purchasing]
6. Database: [FS-ALL]
7. and: Release: [e.g. 7.50]
8. Save the Web page: In the Document tab > URLDocument1 > Right click > Hyperlink > Edit Hyperlink > Type the file or Web page: [e.g. CC2 Reference Info\R-BSLOSS-EV44M.html] and insert the saved page [replace R-BSLOSS-EV44M with the *edited* report number in Reported by:]
9. Retrieve the report: In the Document tab > URLDocument1 > enter > copy and paste the report into the Description tab > copy and paste the short description in the Short Description:



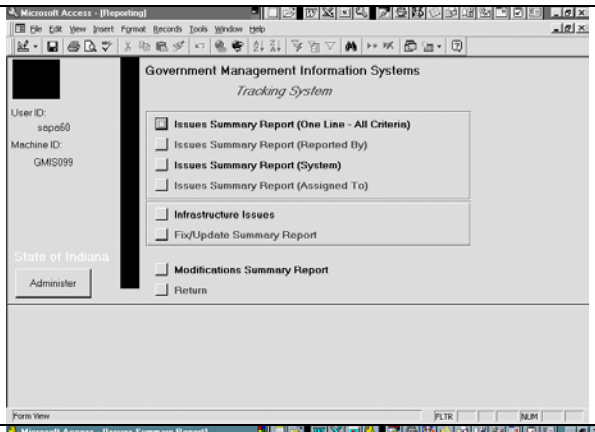
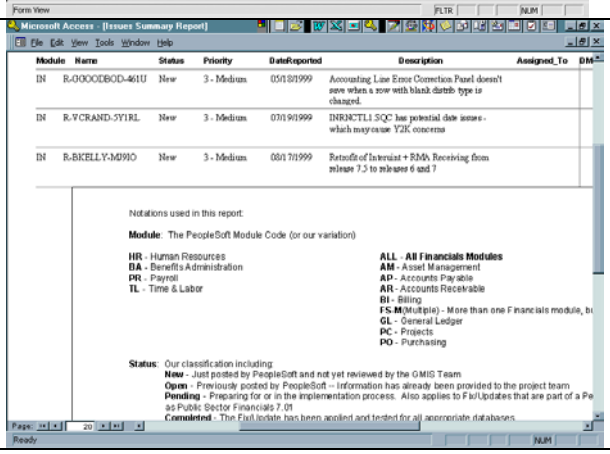
6.3 Review to Determine Applicability

The weekly Fix/Updates are reviewed:

- With the Functional Application staff to determine business need
- With the Technical staff to confirm impact on the various modules, prerequisites, and application mechanics

The result is a determination of whether to apply the Fix/Update immediately or defer until the product update.

This review is facilitated by the use of the GMIS Issues database. Each weekly Fix/Update is recorded in the database and categorized as to module affected. Reports are generated by module and distributed to the relevant teams for review.

1. Then reports are generated for distribution to the relevant Functional and Technical team members.	
2. A sample report is generated from the previous screen	

6.4 Apply to Each Database Environment

Fix/Updates are initially applied to the xxDMO (FSDMO for Financials or HRDMO for HR) following PeopleSoft installation instructions and the state's change control procedures. Then they are migrated through the remaining database environments using the GMIS Change Control procedures.

The following notes relate to the application of the Fix/Update to the DMO environment.

- Instructions are delivered with the fix and can involve:

  Installing / copying new software
  Running some delivered scripts
- Applied using the Application Update Methodology and can involve:

  Copying new objects (panels, menus, etc.)
  Installing new application programs (Cobol, SQR, etc.)
  Running delivered scripts
  Manually adjusting application programs or objects
  Specific instructions are included with the fixes
  Before you get started
    Remember to read the instructions
    Make sure you have a recent backup of your database
    You will need an Application Update Database (AUDB)
- Follow the instructions on where to copy files

  Cobol Programs
  SQR Programs

DataMover Files
etc…
(Note: PeopleSoft objects are delivered in a DataMover file)

- The DataMover file needs to be copied into your Application Update Database

  Refresh the AUDB if necessary - AUREFRSH.DMS
  Import the objects using DataMover into the AUDB - AUIMPORT.DMS
- Copy the objects from the AUDB to your DMO (vanilla) database
- Follow the upgrade instructions to implement the objects in DMO
- Compare, copy, and export the objects to all other databases
- Documentation: When applying an update or a fix it is important to document the following:

  Which update or fix was applied
  When it was applied
  Who applied it
  Which databases it was applied to

Chapter 7. Change Control Standards

7.1 Purpose

The purpose of Change Control is to improve system availability by providing a detailed audit trail of new development, enhancements, and modifications made to the system and by ensuring the communication of environment changes to all appropriate groups.

7.2 Roles And Responsibilities For Change Control

The "Roles and Responsibilities" are defined in the following paragraphs. All software lifecycle practices will be in accordance and compliance with GMIS/PeopleSoft Technical Standards and Procedures as well as other relevant State guidelines. Duties are as follows:

7.2.1 System Change Requestor

The Requestor proposes changes to the system (i.e., application, database, hardware, operating system, network, etc.) Anyone on the functional, technical, or testing team may initiate a change. The Requestor's responsibilities may include:

- Identifying system problems requiring change,
- Filling out the appropriate Change Request forms,
- Providing justification for the change,
- Obtaining proper approval for the change,
- Providing further detailed information, as required, and
- Providing technical information, as required, to the Analyst and/or Developer during the lifecycle of the change.

7.2.2 Change Control Coordinator

The Change Control Coordinator oversees the change control process. The Technical Infrastructure Manager or other appropriate staff may fulfill this role. Responsibilities are divided in to two (2) areas:

- Facilitating the transition of a request from one phase to another (e.g., migrating from Development to User Acceptance Testing), and
- Monitoring and maintaining the change control process.
- Specific responsibilities include:
- Facilitating and providing quality assurance for the component steps of the Change Control process,
- Chairing the Change Control meetings,
- Approving "Emergency"* requests,
- Overseeing the use of the various tools of the Change Control process,
- Ensuring consistent communication to system users and team members.

* NOTE: On occasion, it may be necessary for changes to be implemented on an "emergency" basis to support the continued operation of the system. By definition, such changes are limited to those actually required to continue the operation of the system in support of the current user community.

Even though a request may be implemented on an emergency basis, the various steps of the Change Control process will still be completed as soon as practical.

7.2.3 Change Control Administrator

The Change Control Administrator oversees the maintenance of the GMIS/PeopleSoft system and environment. Specific responsibilities include:

- Altering PeopleSoft System Configuration Tables,
- Migrating PeopleSoft changes,
- Applying PeopleSoft patches, and
- Upgrading and maintaining PeopleSoft version(s).

7.2.4 Infrastructure Manager

The Infrastructure Manager serves as the Technical Lead for implementation phases and the production systems. The Infrastructure Manager is responsible for design, development and implementation of the supporting PeopleSoft technical architecture. The Infrastructure Manager also serves as the Change Control Coordinator.
Specific responsibilities include:

- Liaison between the Functional and Technical Implementation Teams
- Coordinating the various supporting teams including DBA's, the Network Support Team, System Software/Utility Services, Security, Computer Operations, etc.
- Design and maintenance of the hardware and software architecture
- Management and/or oversight of
- Change Control process
- Application Upgrades, Fixes, and Patches
- Performance Tuning
- Project Standards, Policies, and Procedures

7.2.5 Functional Managers

Functional Managers for each PeopleSoft module are members of the Change Control Team and are responsible for clarifying any requested functional changes in their respective areas.
Specific responsibilities include:

- Prioritizing and coordinating functional changes,
- Approving changes in their functional module,
- Reporting Change Control decisions, announcements, and other system change information back to their functional areas
- Distributing system change related information (PeopleSoft Fix/Update and Upgrade reports, planned system outages, etc.) to their staff

7.2.6 Technical Managers

Technical Managers for each PeopleSoft module also are members of the Change Control Team. They are responsible for clarifying, from a technical and design standpoint, how a change will be incorporated.

Specific responsibilities include:

- Prioritizing and coordinating technical changes,
- Approving technical changes their module,
- Clarifying technical information as it pertains to the change being implemented, and
- Reporting decisions back to their technical area.

7.2.7 Network Administrator

The Network Administrator is responsible for maintaining control of any network configuration or network software configuration changes. This includes system upgrades or configuration changes to the Novell network. The Network Administrator participates in the Change Control Team meetings as appropriate but especially when there is a network change being considered or users are experiencing slow response times.
Specific responsibilities include:

- Approving all network related changes,
- Prioritizing and coordinating network changes,
- Reporting Change Control Team decisions back to their network area, and
- Forwarding copies of the release reports to the appropriate individuals within their network area.

7.2.8 Functional User Test Team

Functional User Test Team members are representative of typical end users.
Specific responsibilities include:

- Performing functional review and testing of the PeopleSoft system to ensure business requirements are correctly designed and implemented,
- Documenting Change Requests as appropriate,
- Testing changes in the designated environment,
- Documenting and communicating issues/problems with changes during testing,
- Recommending tested changes as ready for migration,
- Verify and/or validating that changes are functioning properly within the Production environment, and
- Documenting and communicating issues/problems with Production problems

7.2.9 Analyst(s)

There are various types of Analysts including Functional, Technical, and Network.
NOTES:

- Some staff may perform roles both Analyst and Developer roles.
- The Database Administrator (DBA) can also act as an Analyst when a SCR relates to database performance or maintenance.

Analysts receive approved Change Requests from the Change Control Coordinator.
An Analyst's responsibilities include:

- Clarifying Requirements with the staff requesting the change,

- Creating specifications including an impact analysis if appropriate. The impact analysis may require a cost/benefit analysis. Agency management may request this requirement. The primary function of the Impact Analysis is to determine 'what are the implications of implementing the change.'
- Supporting the development of test cases (or scenarios), as appropriate,
- Supporting the Developer(s), as required in making the specified modifications to the Change Request.
- Reviewing test results and approving the Migration Packet.
- Forwarding "Approved" Migration Packets to the Change Control Coordinator, and

Assisting the Functional User in testing the Change.

7.2.10 Developer(s)

Developers are responsible for making changes in the Development environment as specified by Analyst(s).
Specific responsibilities include:

- Receiving the Change Request specifications from Analyst(s),
- Manually checking out objects from the system,
- Making modifications listed in the specifications,
- Working with the Analyst(s) to resolve any issues/concerns/questions,
- Updating the Impact Analysis created by the Analyst(s),
- Testing the change that is being developed,
- Creating a Migration Packet that identifies the objects modified and the documented test results,
- Manually checking modified objects back into the system, and
- Delivering the Migration Packet to the Analyst(s) for their review.

7.2.11 Database Administrator

The Database Administrator (DBA) is responsible for maintaining the databases.
Responsibilities relevant to the Change Control process include:

- Participating with the Change Control Team and the Change Control Administrator to implement changes,
- Assisting Analyst(s) and Developer(s) with database issues,
- Migrating database changes,
- Analyzing database performance and initiating Change Requests to enhance system performance,
- Maintaining a stable database environment,
- Supporting database upgrades and patches.
- Creating Change Control for "non-routine" database maintenance functions such as:
- Upgrading to new version,
- Updating databases (table change, change values),
- Granting permissions, and

- Coordinating bringing the database up and/or down.
- Changing tables, indexes, stored procedures, and triggers, and
- Changing application data table setup and control

7.2.12 Change Control Team

The Change Control Team provides oversight to the change control process. The team reviews, and where appropriate, approves Change Requests. The team is also charged with approving the migration of changes into the various testing and production environments. The Change Control Coordinator/Infrastructure Manager is the chairperson for this team.

The Change Control Team is composed of the following personnel:

- Change Control Coordinator,
- Functional Managers,
- Technical Managers,
- Quality Manager,
- Change Control Administrator,
- Security Administrator, and
- Database Administrators (DBA) as needed.

The Change Control Team's specific responsibilities include:

- Meeting twice a week (or as necessary) to review and approve Change Requests,
- Approving and coordinating the migration of change requests to the testing environment (FSQA for Financials and HRQA for Human Resources) and to Production,
- Coordinating the implementation of Change RequestsRs across various modules and agencies,
- Determining benefit of changes, and
- Determining cost impact.

7.3 Change Control Procedures

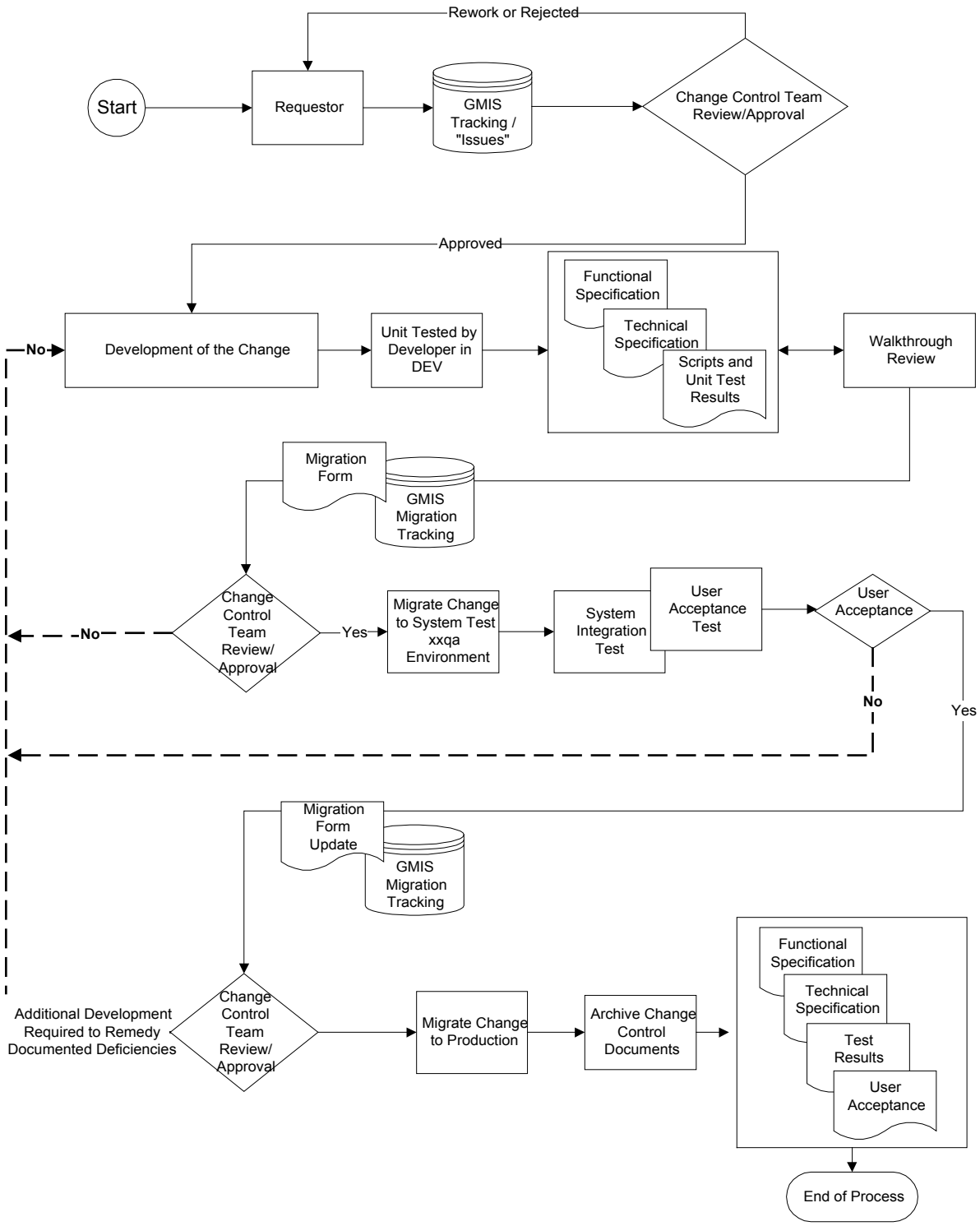
Change control procedures provide a common development and implementation path for all changes. These procedures explain the many stages a change may go through from its inception to final implementation.

Some basic premises of these procedures include:

- All functional and technical changes follow documented procedures,
- Changes to the Development, Quality Assurance, Production, and Training environments are scheduled,
- Changes require managerial review at various stages in their lifecycle,
- The status of Change Requests can be easily obtained by using a common repository, and
- Activities related to Change Requests, as well as potential changes to the GMIS/PeopleSoft environment, will be coordinated across the various departments.

Appendix D, Change Control, illustrates the process of requesting and documenting a Change Control Request. The following flow chart summarizes the Change Control process.

GMIS/PeopleSoft
Change Control Process



7.3.1 Initiating A Change Request

Any team member can propose a change to the system. To initiate the process, the Requestor enters a new "Issue" (which will be categorized as a System Change Request or a Modification as appropriate). The Requestor is responsible for obtaining the initial approvals from the relevant management personnel.
Change Requests are entered just as other GMIS system transactions such as Issues and Fix/Updates. The Category recorded is "System Change Request." Related documentation can be inserted into this record.
A "Change Control Checklist" is also linked to the record to assist the requestor and the developer in assuring that the change control steps are completed. See the example on the following page.The second panel of the record provides for documenting and tracking the activities of the request.
The requestor can do all of the steps in the "Initiate Change Request" either on their own or with an assigned technical developer. The steps of the checklist are intended to follow the "normal" steps of application development and largely correspond to the change control process definitions that follow.

7.3.2 Initial Approvals

The originating Requestor is responsible for obtaining initial approval from the appropriate Functional or Technical Manager prior to the first review by the Change Control Team and before development work begins.
The standard report from the Issues database summarizes the request and is the vehicle for obtaining approvals. The Requestor can sign the form as the "Business Process Reviewer" or Technical Reviewer" as appropriate.

7.3.3 Initial Review by the Change Control Team

After the appropriate initial approval, the Requestor (or the sponsoring Manager) will notify the members of the Change Control Team that a new request is being submitted. A suitable notification to the Team would be a group e-mail referencing the record number of the Request in the Issues database. Whenever possible, that e-mail notification should be made at least the day prior to the meeting so that the team members have a chance to review and print out any relevant information from the database. As a practical matter, the Requestor should also confirm especially relevant team members have received notification and that they have any necessary documentation.
The manager approving the change is responsible for having it presented to the Change Control Team. Specifically included in the review are areas affected by the change and the change's priority and tentative implementation schedule. Under normal circumstances the Team signs-off on changes. However, it reserves the right to question or postpone work. The Change Control Team is comprised of the following team members:

- Change Control Coordinator
- Infrastructure Manager
- Change Control Administrator
- Security Administrator
- Help Desk Administrator
- Functional Team Member
- Technical Team Member
- Quality Assurance Team

7.3.4 Development of Changes

The Analyst receives the Change Request and begins development activities following the Development Standards documented in Chapter 4 of this manual. The Analyst is responsible for:

- Completeness of the functional specification,
- Development of the technical specifications,
- Programming activities,
- Development of test scripts and successful completion of unit testing,
- Initiating a walkthru / technical review of the change, and
- Generation of the Migration Request upon successful completion of the above,
- Periodically updating the status and documentation in the Tracking database.

In some cases the Analyst may be assisted by a Developer (programmer) who will perform some of these tasks under the direction of the Analyst.

7.3.5 Rework for Change Requests in Development

Changes returned to the Development environment must go through the Analyst(s). The Analyst(s) works with the Developer to resolve the problem and updates the change control packet with the resolution and test results. When the modification is ready to be re-migrated, the Analyst(s) updates the request status and gives the Migration Request to the Change Control Administrator. He or she will migrate the changes during the next scheduled migration to the testing environment: FSQA for Financials or HRQAfor Human Resources.

7.3.6 Walkthrough

Although the formality of a Walkthrough may vary with the complexity and/or impact of a particular change, they should always occur at the completion of the initial testing in the Development environment and before consideration for migration to other environments. The Analyst is responsible for scheduling and managing the walkthrough. Participants should generally include relevant functional representatives, technical peers and/or technical managers, and representatives of potentially impacted organizations.
Areas to be covered include:

- Completeness of the Functional Specifications (the User-Requestor should participate in at least this portion of the walkthrough to ensure that their definition of the problem is being addressed),
- Technical "strategy" or method used to satisfy the request -- alternatives, if any, should be identified,
- Demonstration that the solution in fact solves the problem,
- Technical design especially with regard to system performance and maintenance efficiency,
- Completeness and success of Unit Testing, and
- Adherence to Standards for all components of the Change Request.

Areas for improvement identified during the walkthrough will be addressed by the Analyst and approved by appropriate management before proceeding with the migration request.

7.3.7 Review and Approval by Change Control Team

After a successful development, test, and walkthrough of the Change Request, the Analyst may prepare a Migration Request, have it signed by the User-Requestor, and submit it for review and approval by the Change Control Team. The Analyst enters the Migration Request itself into the Tracking database. The Migration Request record includes areas to identify where the supporting documentation is located. Documentation at this point should include:

- Functional specifications
- Technical specifications
- Unit Test scripts and results, and
- Walkthrough notes, actions, remedies, and approvals

The Change Control Team may:

- Approve the Change Request for migration from Development to the testing environments (FSQA for Financials, HRQA for Human Resources),
- Send the change back for further clarification, design, testing, or documentation, or
- Approve the Change Request, but delay its migration to the testing environment.

A Change might be delayed for a variety of reasons including for example:

- Environment "freeze" in preparation for other system activities
- Lack of resources to support the migration and potential troubleshooting
- Other higher priority Changes needing to be migrated.

7.3.8 Migration to Testing Environments

Changes approved for migration into the testing environments (FSQA for Financials and HRQA for Human Resources) have their status updated within the Tracking system (by the Change Control Coordinator or other designated staff) and are forwarded to the Change Control Administrator. He/she is responsible for coordinating the migration of all development changes into the Testing areas. After the migration is completed, the Change Control Administrator updates the Tracking system.

Although operating system, hardware, database, network and other non-PeopleSoft changes are not the responsibility of the Change Control Administrator, he/she is responsible for managing all steps in the migration to ensure the necessary changes are made in the proper sequence (see Chapter 6: System Maintenance Standards in this document).

7.3.9 System Integration and User Acceptance Testing

Functional Users are responsible for testing changes migrated into the testing environments (FSQA for Financials and HRQA for Human Resources) and provide a recommendation for acceptance of the changes made so that they may be migrated into the Production environment. The Analyst will coordinate this testing and provide the Testing Team with the scripts utilized during the Unit Test. The Testing Team may supplement these with other standard and/or specific tests relevant for the change. If the changes are rejected, they are returned to the Developer for rework.

7.3.10 Change Control Team Production Review

After the Functional Users approve a change in the testing environment, the Analyst updates the Change Request documentation and enters a Migration Request -- including the signature of the

User-Requestor -- for the move to the Production environment. The Change Control Team reviews the request and may:

- Approve the migration for a specified date,
- Approve the request but delays the migration, or
- Reject the change and returns it to the Analyst for revisions.

7.3.11 Migration to Production

If approved by the Change Control Team, the Change Control Administrator migrates the change to the Production environment, finalizes the documentation for this Change Request, and updates the Tracking system.

7.3.12 Example Agenda For Change Management Team Meetings

1. Review "OPEN" issues from the previous meeting.
2. Review "PROBLEM REPORTS" and "ISSUES" associated with prior changes.
3. Develop a Plan of Action to prevent a reoccurrence of such problems/issues in the future.
4. Review proposed changes to the Testing (QA) and Production environment(s).
5. Discuss impacts, risk, fall back and recovery plans, test results and user training/notification requirements associated with each change or combination of changes.
6. Develop a Plan of Action for each Change Request discussed.

The Change Control Coordinated (or designated staff) will keep and publish minutes of the meetings for items, statuses, etc., that are not documented in the Tracking systems.

7.4 System Configuration Changes

7.4.1 General Principles

Many aspects of the PeopleSoft application affect the entire application for all Agencies. These settings can have wide-ranging and subtle effects on the behavior of the application. In order to maintain the integrity and auditablility of the data managed with PeopleSoft, the GMIS Team will centrally managed these system settings according to established standards; variations from those standards will be documented.

The GMIS Team may delegate the management and implementation of selected system changes to other entities. System changes to the HRMS application are delegated to the State Personnel Department; creation and configuration of Purchasing (PO) Business Units is delegated to the Procurement Division of the Indiana Department of Administration.

7.4.2 General Options

Within the Financial Application several codes and options control all users of the system. Among these are the Installation Options panel group, location codes, and Units of Measure. The GMIS Team will centrally administer these items.

7.4.3 Table Set Sharing

Table-set sharing is much like security administration; it affects the core PeopleSoft application. This essentially administrative function is subject to the regular GMIS change management processes in order to maintain the stability of the application.

Agencies considering a change in Table Set Sharing are strongly encouraged to discuss these changes with GMIS Team.
The administrative process for requesting a change to a business unit's table set sharing will follow this procedure:

1. Each Agency (business unit) will authorize a single person to request changes to that business unit's table set sharing and similar settings. The Agency will communicate the name or position of the authorized person to the GMIS team.
2. Each request for a change in Table Set Sharing will include the following information:
   a. The requesting business unit.
   b. The table set to be changed.
   c. The record set(s) to be changed.
   d. The Indiana standard setting, the current setting, and the requested new setting.
   e. An explanation of any variance from the Indiana standard setting.
3. The change request will be circulated for comment to all agencies and to module leads (IDOA Procurement, State Personnel Department, etc.), as well as other interested points of contact.
4. If no objections or questions are raised, the GMIS Team will implement the change.
5. If an objection or question is raised, the change will be discussed by relevant parties.

7.4.4 Business Unit Setup

The creation of additional Business Units is an administrative function. The GMIS Team will create all business units in accordance with established recipes.

7.4.5 Shared Codes

There are many places in the PeopleSoft application where codes are shared across the application. Their visibility is not limited to a particular Business Unit or SetID. Among these shared codes are Locations, Invoice Formatting and Numbering Options, and Pay Cycles. Agencies creating new codes that are not grouped by SetID should use their three-digit agency number as the first three characters of the code. Agencies should use the next one or two characters, where space permits, to designate any relevant divisions or departments within the Agency. Variations from these standards should be discussed with the GMIS Team.

7.4.6 Workflow Roles, Routings, and Options

The creation and alteration of Workflow Roles, Routings, and Options must be coordinated with established security classes. In addition, Roles and Routings help enforce State of Indiana policies and rules governing how State Agencies operate. The GMIS Team will administer these items.

Chapter 8. Security Standards

8.1 Introduction

GMIS Security is comprised of several components:

8.1.1 Application Security:

The security applied within the PeopleSoft application. For example, the definition of a PeopleSoft Security Class with the specific menus, panels, query groups, etc., that a member operator can use, is part of application security. Likewise, those Security Classes that an operator (or user) has as part of their profile and the Business Units that the operator can utilize are components of application security.

- Security Classes
- Menus
- Processes
- Query Profiles and Access Groups
- Operators
- Assignment of Operator Classes
- Business Unit Security

8.1.2 Database Environment Security:

Security controls the interaction between the PeopleSoft application and the database. There are also several components of this layer:
PeopleSoft Connect ID's. The security that controls the access and processing within the database environment, for example, read-update-delete levels of authority to various tables in the database. These grants and privileges are database characteristics that are not unique to the PeopleSoft environment but in this case are applied to PeopleSoft tables.

8.1.3 Network Environment Security:

Windows NT Security: Controls access to resources (servers and files) on the GMIS application and file servers.

8.2 Application Security

8.2.1 Overall Design

Application Security at this stage of our implementation consists primarily of PeopleSoft Security Classes and Operators.

8.2.2 Security Classes

Our intent is to initially establish the following types of operator classes in the various databases (DEV, QA, PRD, DVL, etc.). Note that these classes may vary by database. Also the detail shown here is the model for the Financials environments. HR/Benefits have a similar but not identical structure.

Class	Staff Group	Description

TECHNICAL	Technical Team Members	
SECURITY	PeopleSoft Security Administrators	Able to create and modify PeopleSoft security classes and operators but have no other transaction functionality
CHGCNTRL	Change Control Administrators	Update authority to objects in order to migrate changes
TECH / APPDEV	Technical Support and/or Application Development Staff	Authority relative to the specific database environment: For example, full authority in xxDEV, transaction entry but no Application Designer access in xxQA, and display-type access in xxPRD.
DISPLAY	Technical Team Members (and possibly others)	Display only - cannot update objects or enter transactions
FUNCTIONAL	Functional Team Members	Ability to enter appropriate transactions and run processes for QA testing
AP_ADMIN	AP Administrators	Able to configure the Accounts Payable module and perform AP supervisory functions
AP_OPER	AP Operators	Able to perform regular / daily AP transactions
AP_DSPLY	Any staff needing only to retrieve AP information	"Display Only" for all AP panels in order to provide look up capability for any future classes of AP Operators
Note: Other Modules such as Asset Management, Billing, and General Ledger follow this same structure		
PO_xxx	Purchasing staff	Approximately ten specific classes geared to the specific needs of central office and individual agency needs.
VNDMAINT	Vendor Maintenance	Exclusive administration and maintenance of AP/PO vendors. Other classes are restricted from this function.
UTILITY		
BUS_UTIL	Applied to all PeopleSoft users	Process Monitor, Query, and Utility trace menus
DISPLAY	Technical Team Members (and possibly others)	Display only - cannot update objects or enter transactions

Individual agency implementations may require unique security classes if the state model does not fit the agency's structure. In this event, separate classes will be created following, if possible, this naming structure:

Format	Sample
AAAA_MMF	IDEM_APM
AAAA = Agency label	IDEM
MM = Module Name	Accounts Payable
F = Function or Role	Managers

If a whole series of classes is needed where the Function label isn't appropriate, then the classes might be labeled IDEM_GL1, IDEM_GL2, IDEM_GL3 as an example.

Generally speaking, staff of the IDOA-Procurement Division and purchasing-related staff in the agencies will belong to various the PO_xxx classes while IDOA-Operations and Dept. of Information Technology (DoIT, formerly ISD) staff may have a business need to belong to relevant AP, GL, and PO classes. A DISPLAY class will be available to provide users a "read-only" capability for virtually all modules.

Individual operators may be assigned to multiple classes in order to provide all of the capabilities they need. Following is an example of the structure and its uses

Vendor Specialist
VNDMAINT
BUS_UTIL
PO_DSPLY

Buyer
PO_PAB
BUS_UTIL
PO_DSPLY

Deputy Director
PO_PA
BUS_UTIL
DISPLAY

Additional security classes may be needed to further distinguish the roles and capabilities for the various types of Procurement staff.

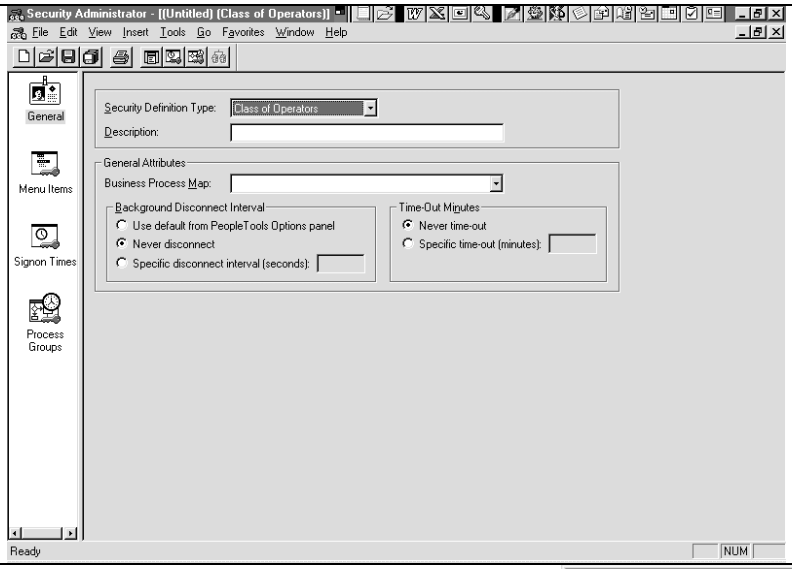
Detailed listings of PeopleSoft menus available to these classes are linked to the separate GMIS Security Database (MS-Access) system.

Creation of Security Classes

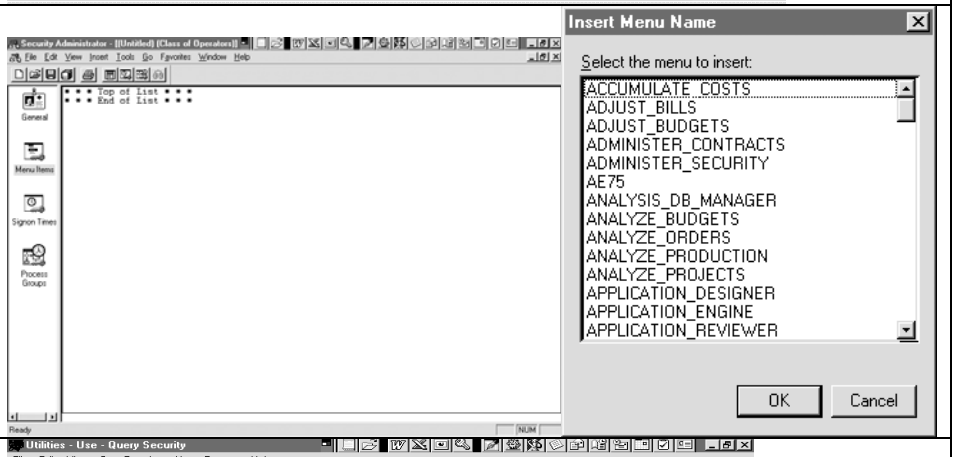
Two methods for creating new Security Classes are to:

PRCR_NVS_HST-- Start with a blank profile and add the menus, process, query access, and other characteristics appropriate for the class, or

PRCR_NVS_HST-- If an existing Class is reasonably close, you can "save as" your new class and then revise the characteristics as needed.

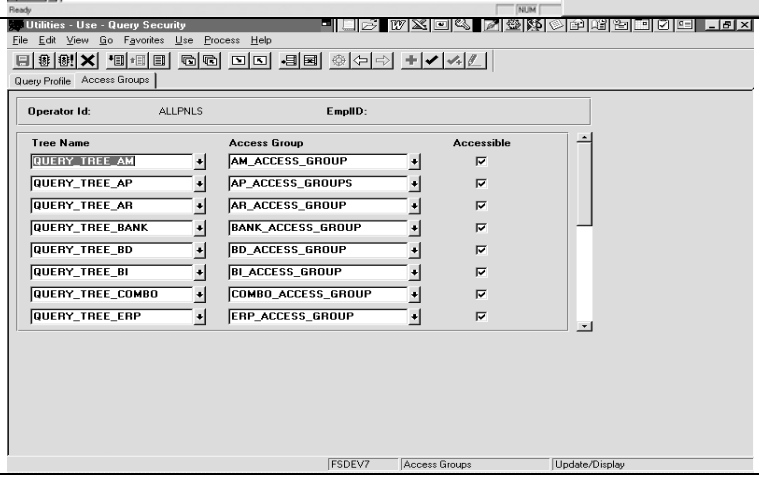


Add / Modify Menu Items

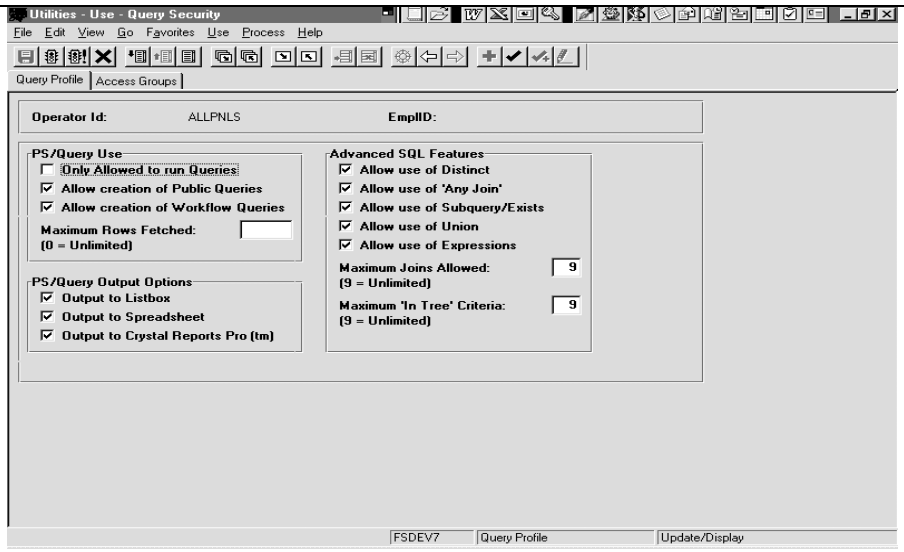


Add Process Groups

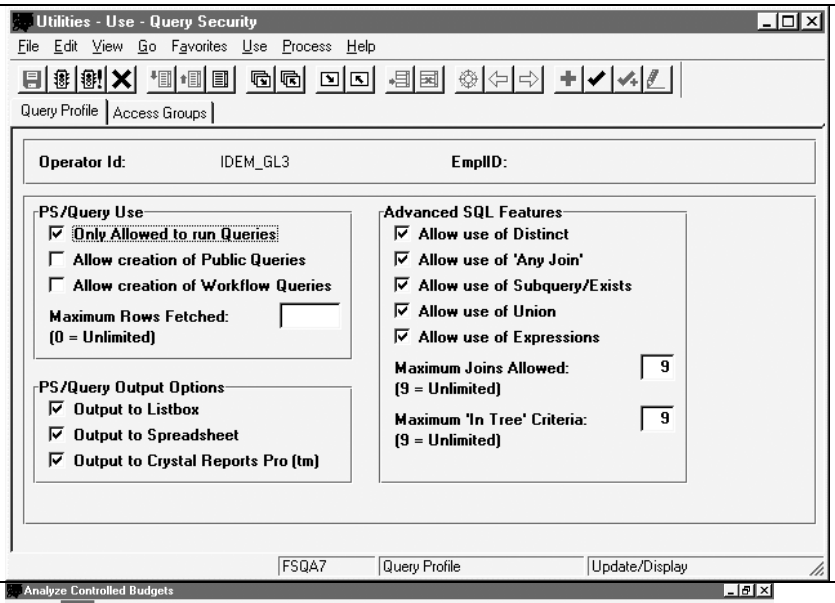
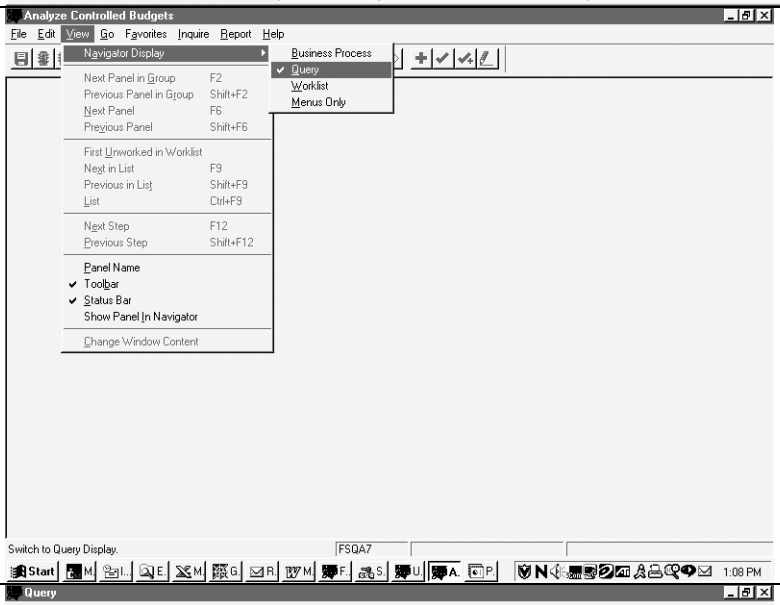
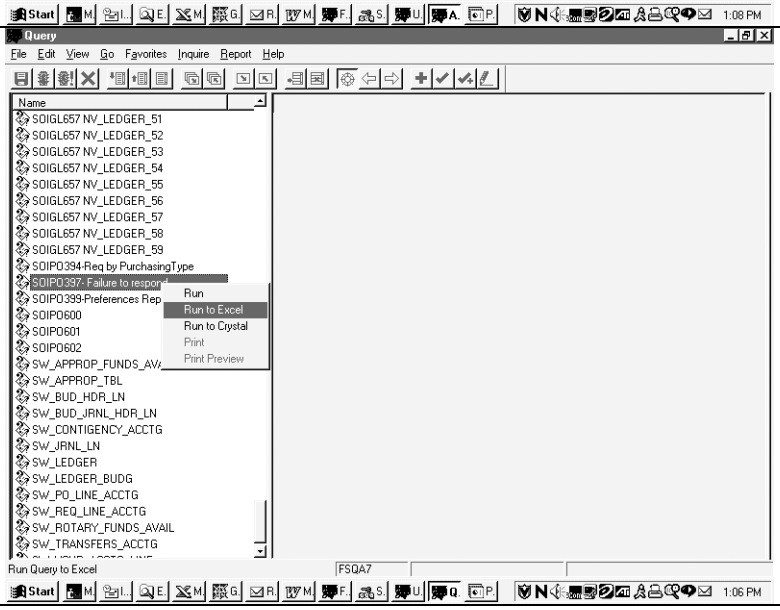
Any new class, whether copied from a previously existing one or created from scratch, initially has no Query Access Groups defined and therefore, any operators in that class will not be able to execute queries. The following example shows the PeopleSoft query characteristics to be defined



Add Query Access Groups
Of special note are these two categories:
Only Allowed to run Queries will limit the class to running Public Queries -- they won't be able to create their own.
Allow Creation of Public Queries (for use by others) should be enabled in development environments but not checked in production. Production queries need to be migrated from xxDEV and xxQA.
Only Allowed to run Queries will limit the class to running Public Queries -- they won't be able to create their own.
Allow Creation of Public Queries (for use by others) should be enabled in development environments but not checked in production. Production queries need to be migrated from xxDEV and xxQA



Query Security -- Selected IDEM Operator Classes
The goal for selected IDEM Operator Classes (IDEM_GL3 for example) is to allow those operators to run Public Queries but not create their own.

1. To accomplish this we turn on the Only Allowed to run Queries checkbox.	
2. This then requires the operator to use the View - Navigator – Query navigation.	
3. When the list of Public queries is shown, the operator "right-clicks" on the desired query to select	

the output option. That initiates the running of the query.

Vendor	Name	COUNT(*)
0000000005	1ST QUALITY PRINTING CENTER	1
0000000133	MEYER WASTE SYSTEMS INC	6
0000000188	ACORN DISTRIBUTORS INC	19
0000000604	AUTOMATIC TURF EQUIMENT CO	1
0000000620	ANACONDA SPORTS INC	1
0000001221	TRI COUNTY EQUIPMENT COMPANY	1

8.3 Security Class Maintenance

The content of a Security Class is usually modified for either of two reasons:'
There has been a system modification (new panels added, for example) that needs to be used by operators in specified Security Classes.
The definition or role of the class of operators has changed and therefore the functionality provided needs to be modified, or

8.3.1 Security Changes for System Modifications

As modifications are migrated to new databases, changes are usually required in PeopleSoft security to enable the new menus for the various operator classes. (Note: There may be objects other than menus that are migrated and need security enabled. They would follow the same process, but the term "menus" is used here for simplicity.) Following are the mechanics for each migration:

8.3.1.1 FSDEV -to- FSQA

The developer provides a copy of the Migration Request to the security administrator.
The security administrator records the migration in the GMIS Security Database and generates a request form as a checklist for the classes to be affected. By agreement, the GMIS System Manager (Mike Degner, Myra Wilson, etc.) will have preauthorized certain classes based on their previous definition. For example, a new report in the "Manage Purchase Orders" menu group would be enabled for all of the classes that have "active" access to that group. In this example, that would include PO_PA (administrators), PO_PAB (approved buyers), etc.
The security administrator enables the menu for those pre-authorized classes.
The security administrator will notify the "GMIS System Manager" (Mike Degner, Myra Wilson, etc.) **that the menu has been activated in security by transmitting a copy of the security request form.** They, or their staff, may already be working with the developer in testing the modification, so this notification is to make sure that the classes that have been enabled are appropriate.
If necessary, the GMIS System Manager will return the form to the security administrator with any needed changes.

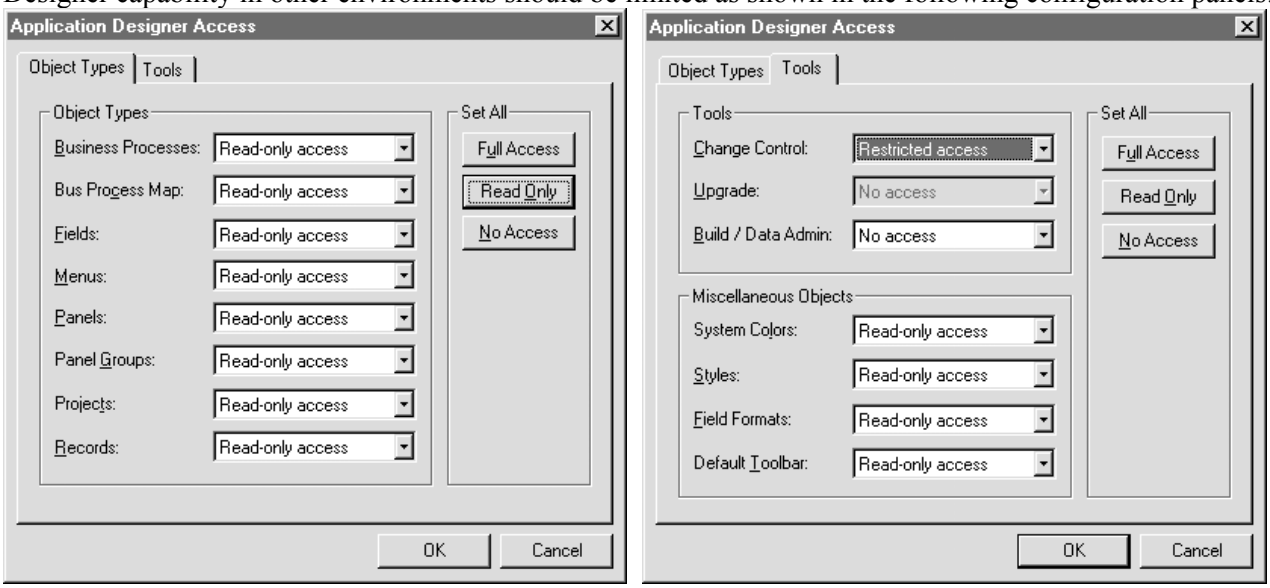
8.3.1.2 FSQA -to- FSPRD (and FSTRN)

This migration has a similar flow except that the GMIS System Manager approves the security changes before they are executed:
The developer provides a copy of the Migration Request to the security administrator.
The security administrator records the request in the GMIS Security Database and generates a worksheet for review with the GMIS System Manager.
The System Manager records (or confirms) the appropriate classes and signs the form.
The security administrator makes the corresponding changes, documenting them on the form along with confirming query results showing all of the classes affected.

8.4 Special Considerations

Certain menus need to be made unavailable for specific Operator Classes. For example, Application Designer, Change Control, and Security menus should not be included in the classes for regular operators and administrators. Unless in "Display-Only" mode, these menu items should not be included:

Even for technical developers who generally have full access to the xxDEV database, their Application Designer capability in other environments should be limited as shown in the following configuration panels:



Using the Security Class approach allows you to maintain the functional security for any number of users in that role with just updates to that class. The disadvantage to this approach is that if a particular function is needed for just one operator, a new class may have to be defined. Still, our experience to date is that once roles are defined, the class approach is the most efficient.

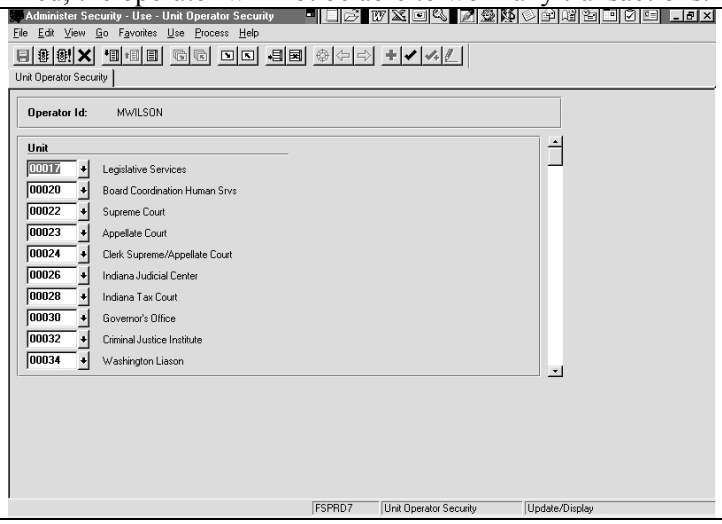
8.4.1 Applying Business Unit Security

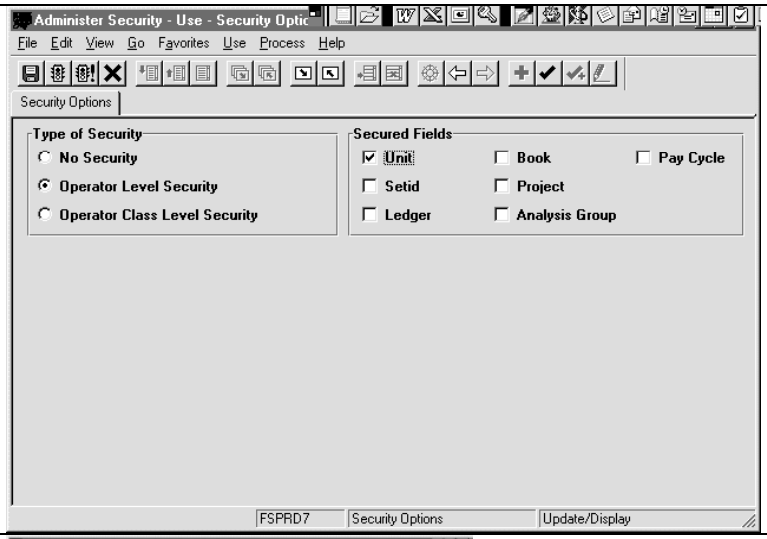
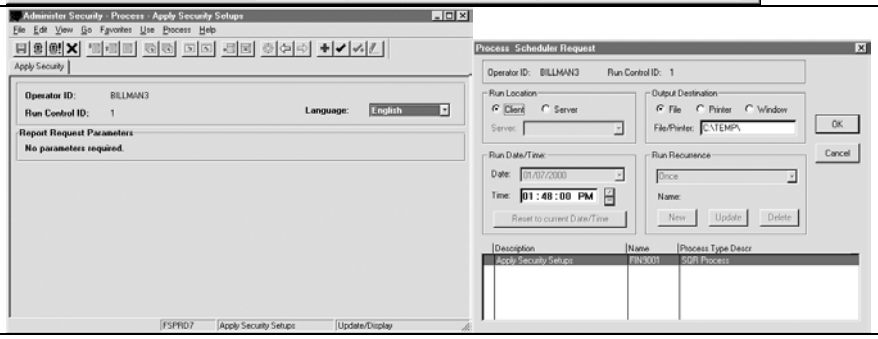
PeopleSoft provides for Business Unit level security controlled by Operator Class or by specific Operator. Our Operator Class design has been fairly efficient for defining authorized system functionality for similar types of operators (for example, Agency Authorized Buyers -- PO_AAB). But, since our Class design groups operators from many different agencies (Business Units) into a single class, we now get to enter each authorized Business Unit for each Operator.

For most of the agency Operators, this is just their own agency Business Unit. But for IDOA-Procurement staff such as MWILSON shown here, every Business Unit must be entered on this panel because this operator may handle transactions from every agency.

The are not a lot of steps to perform, but they need to be done in the order shown. If you turn on the Business Unit security without the BU's defined, the operator will not be able to work any transactions.

1. Add Business Units
   a. For each IDOA-Procurement operator, add all BU's (use SQA Robot script).
   b. For all other operators, Add the specific agency Business Unit.



2. Turn on the Security Options of Operator Level Security with Secured Fields of Unit.	
3. Finally, Process - Security Setups (FIN 9001) to activate.	

8.4.2 Maintaining Operators

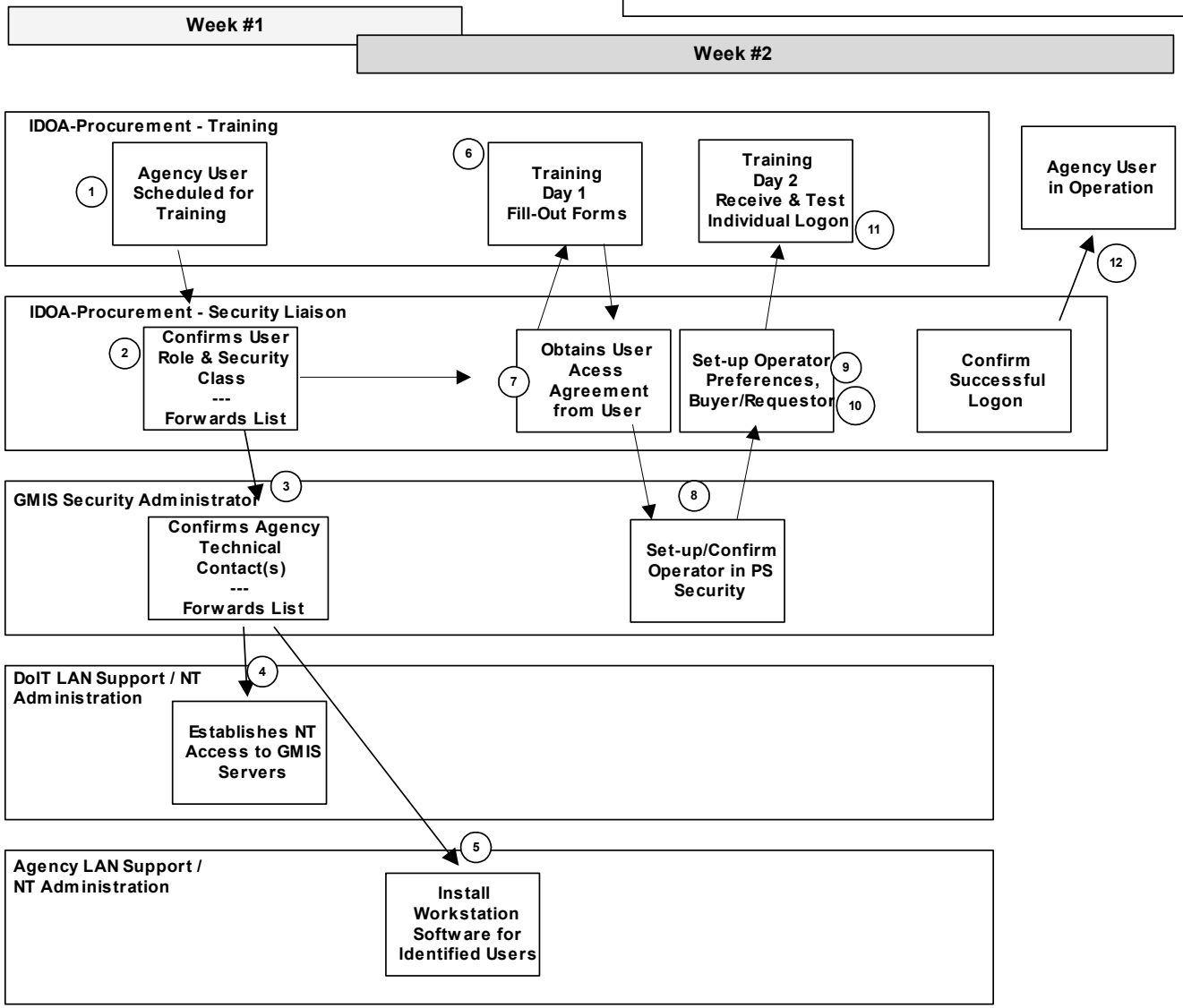
Frequently operators are added in significant numbers as the implementation reaches the training stage. The following process is used to communicate lists for addition to operator security as well as to facilitate the user's workstation installation. Some steps may vary -- times and dates are used for example purposes. Staying close to these timeframes will give us a better chance of our new users being able to successfully get on the system immediately following training.

	Task	Responsibility	Time Required	Example Lead Time Dates
1.	Identify the Operator and schedule for Training.	State agency or central administrative office (for example, IDOA-Procurement)	Varies	Tues., Jan 11th
2.	Confirm the Operator's role(s) and determine the relevant Security Classes	System Owner (for example, IDOA-Procurement) - Security Liaison	1 day	Wed., Jan 12th
3.	Send list of Operators to GMIS Security Administrator	System Owner staff	1 day	Thur., Jan 13th
4.	Notify NT Security Administrators for assignment of user ID/Password in appropriate NT group	GMIS Security Administrator and relevant NT Administrator	Same Day	Thur., Jan. 13th
5.	Notify Agency workstation support contact to install software on new Operator's PC	GMIS Security Administrator	Same Day	Thur., Jan 13th
6.	Training class for Operator	System Owner - Training	2 days	Tues. - Wed., Jan. 25-26
7.	Obtain signed User Access Agreement from Operator and forward to GMIS	System Owner - Training/Security Liaison	Same Day	Tues., Jan. 25th

	from Operator and forward to GMIS Security Administrator	Training/Security Liaison		
8.	Set-up Operator in PeopleSoft Security, apply Business Units, set initial password, and notify System Owner	GMIS Security Administrator	Same Day	Tues., Jan. 25th
9.	Perform Buyer and Requester Setup	System Owner - Training/Security Liaison	1 Day	Wed., Jan. 26th
10.	Set-up Operator with PeopleSoft Operator Preferences	System Owner	Same Day	Wed., Jan. 26th
11.	Provide Operator ID / Password and test Logon from training PC	Operator	Same Day	Wed., Jan. 26th
12.	Confirm successful Operator logon from their own workstation	System Owner - Training/Security Liaison	1 Day	Thur., Jan. 27th

GMIS Security Administration

Actual times may vary significantly from one agency to another. As a rule-of-thumb, Agency Users should be identified and a list provided to the "security / technical teams" at least two weeks before the training date.



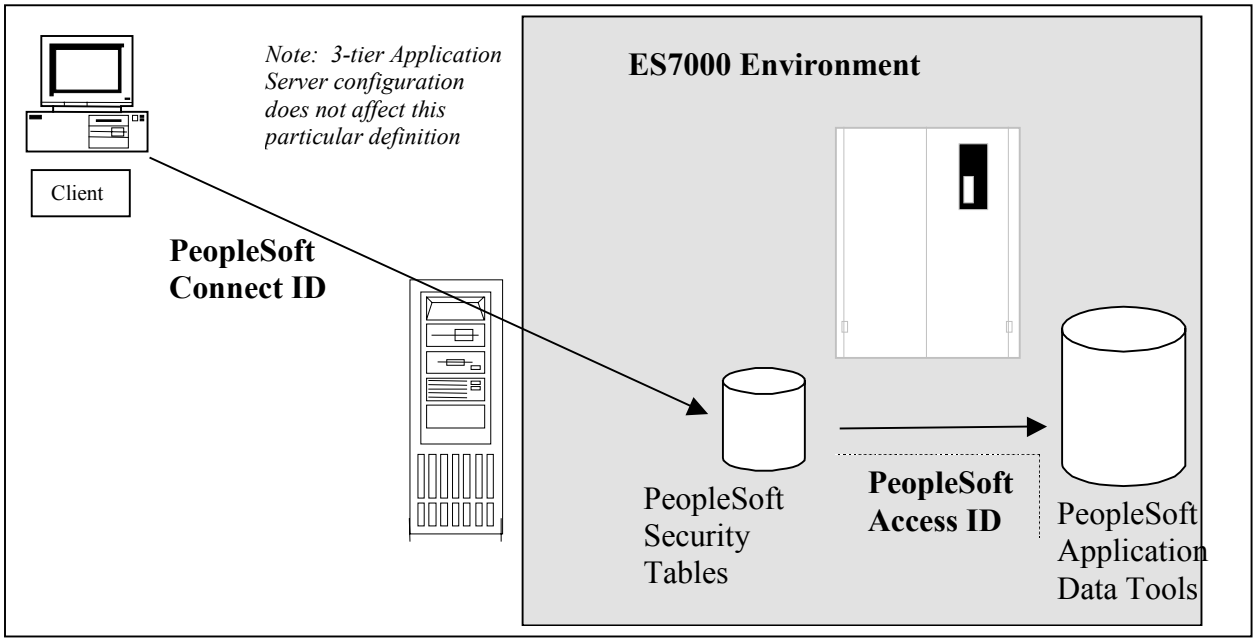
Note: (#)

Numbered steps reference the accompanying task list

8.5 Database Security

8.5.1 PeopleSoft Connect ID and Access ID

The PeopleSoft environment includes a number of components to link the operator to the data in the database. The "Connect ID" authorizes the workstation to make a connection to the database and pick up the security profile for the particular operator. That profile includes an "Access ID" which enables the operator to link to the application tables in the database.
Following is a diagram and discussion of the particular components.



8.5.2 Maintenance of the PeopleSoft Connect ID

Once established as a valid Password, and configured on the workstations, no other maintenance is required. The Connect ID/Password functions as a "behind the scenes" link between the operator's workstation and the database. It has only a security level sufficient to read another table with additional security parameters.

8.5.3 PeopleSoft Access ID Maintenance

Likewise, the Access ID functions as a "behind the scenes" link to the application data once the operator's security levels have been established. The Password is updated periodically by the PeopleSoft security administrator.

8.5.4 Network Security

The Windows-NT Administrator maintains security for access to the various GMIS file servers. Security groups established for this purpose include:
GMIS Account Admins have Full Control of everything under the PSOFT directory tree. This will not be implemented until the evening of Dec 1.
GMIS Admins and **GMIS Admins- Local** have Change permissions to everything under the PSOFT directory tree. This was done because of the potential pandemonium that Full Control gives to changing account accesses with a user's NT Workstation, should they have one available in the future (we're putting our first one in the GMIS office today).

GMIS Fin Admins have Change permissions to everything under the FSDEV directory tree.
GMIS HR Admins have Change permissions to everything under the HRDEV and HRPRD directory trees. The HRPRD part is under review by.
GMIS Training Users, GMIS Users, GMIS Users- Local, and **GMIS Users- Project** have Read permissions only to the entire PSOFT directory tree

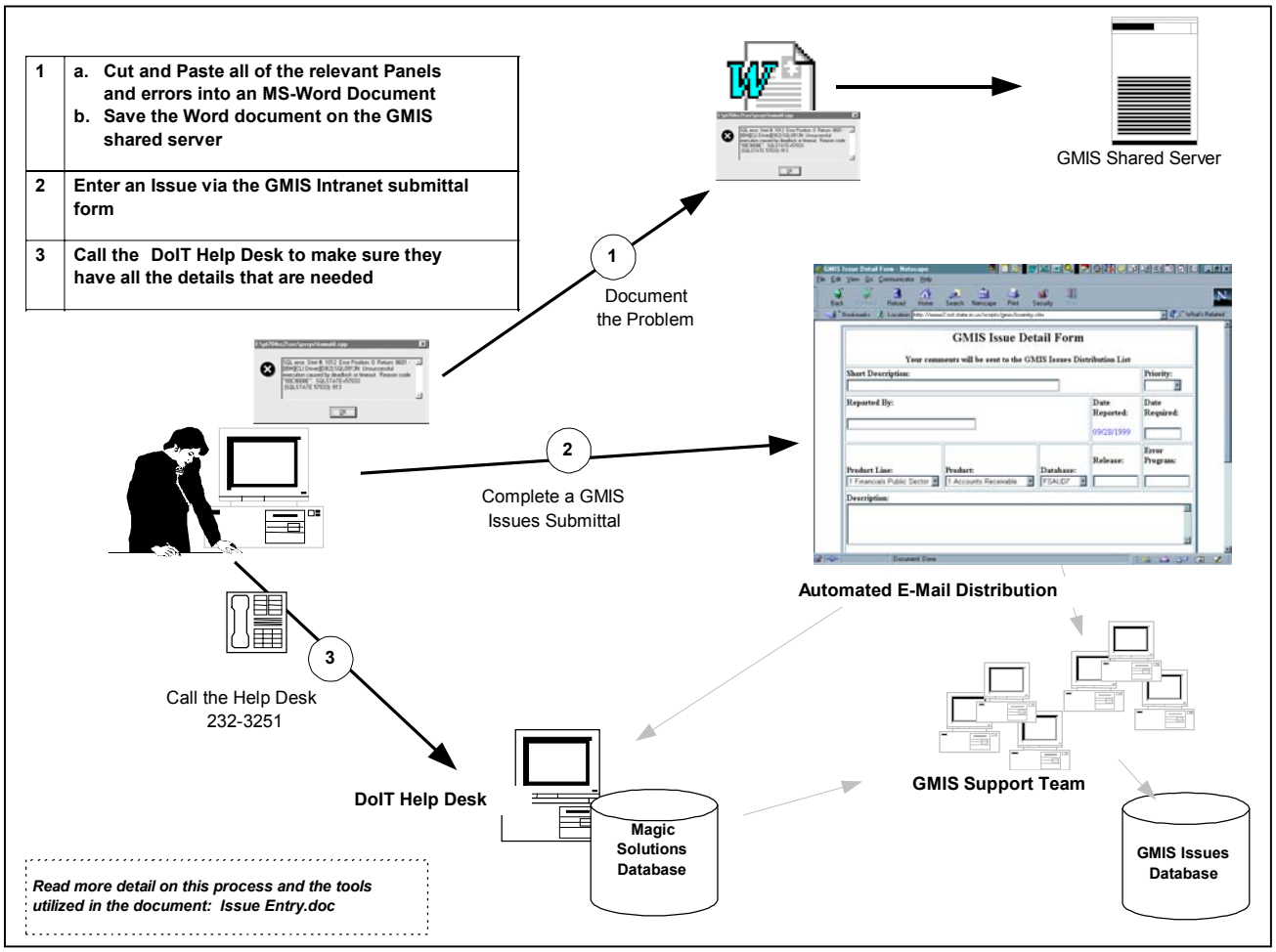
Chapter 9. Problem Reporting Standards

9.1 Purpose

Getting a detailed problem description into the hands of the staff that can fix it is critical to a timely and accurate solution. It's also important that a range of staff are aware of the problem so that we are not independently fixing a problem over and over. And, we need to build on the knowledge base that evolves so that when a problem occurs, we can search for previous fixes or related issues.

9.2 Problem Reporting Tools and Mechanics

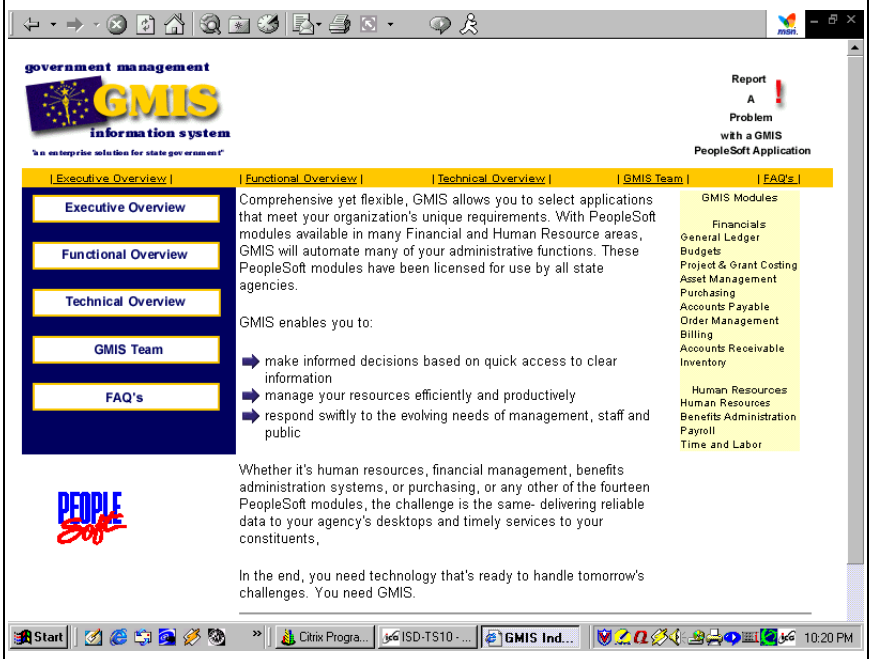
System users of all types are asked to follow these **Three Steps for Problem Reporting**:



Following is additional detail on the individual steps:

So that all system users have a vehicle for reporting problems, the initial entry point is an Intranet-based submittal utility. Here's the navigation:

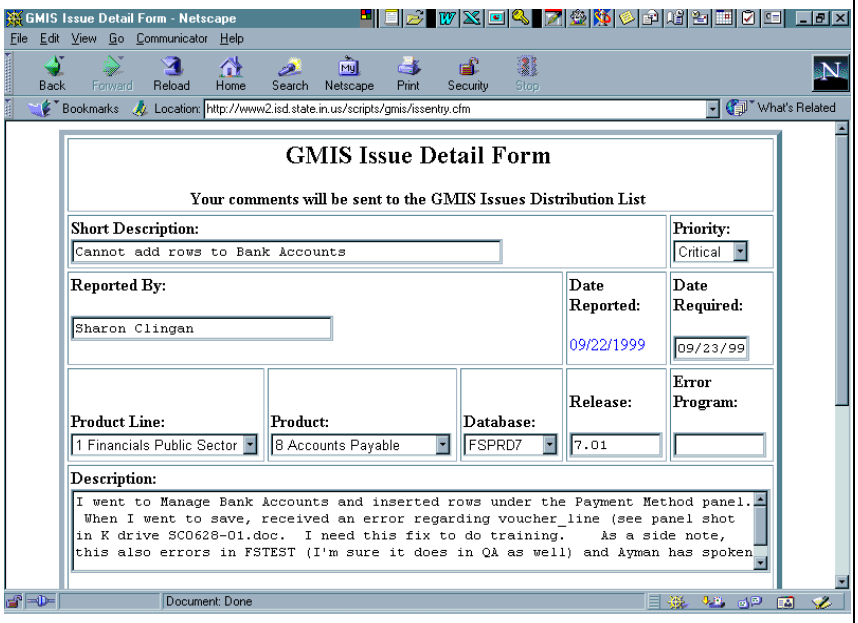
From the GMIS Project Team page, click the Issue Entry button and you will receive the form below.



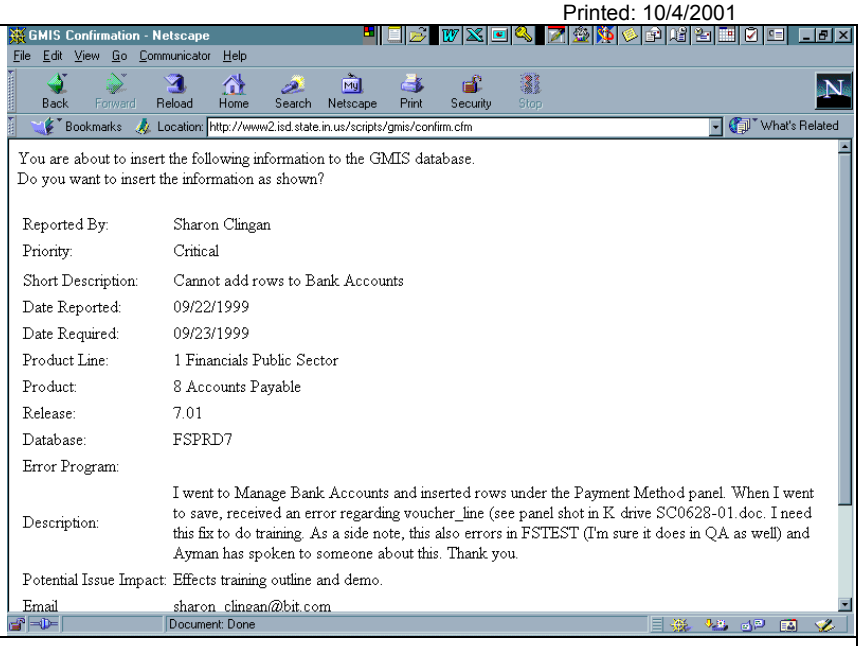
The form itself is fairly self-explanatory:

- You enter a short description
- assign your initial priority and indicate the date a solution is required
- tell where the problem occurred
- and provide a narrative description and also the potential impact of the problem.

When you click the Submit button at the bottom of the form it will return the detail for you to review before clicking the Submit button to actually transmit the issue or problem. An E-mail message is then generated and sent to a distribution list that includes GMIS project management, support team members, and others. The distribution list is a standard MS-Outlook mailing list maintained by the DoIT e-mail team.



In just this one step, the user has communicated the problem in their own words to the staff that will address it, and at the same time, given a "heads-up" to other team members.



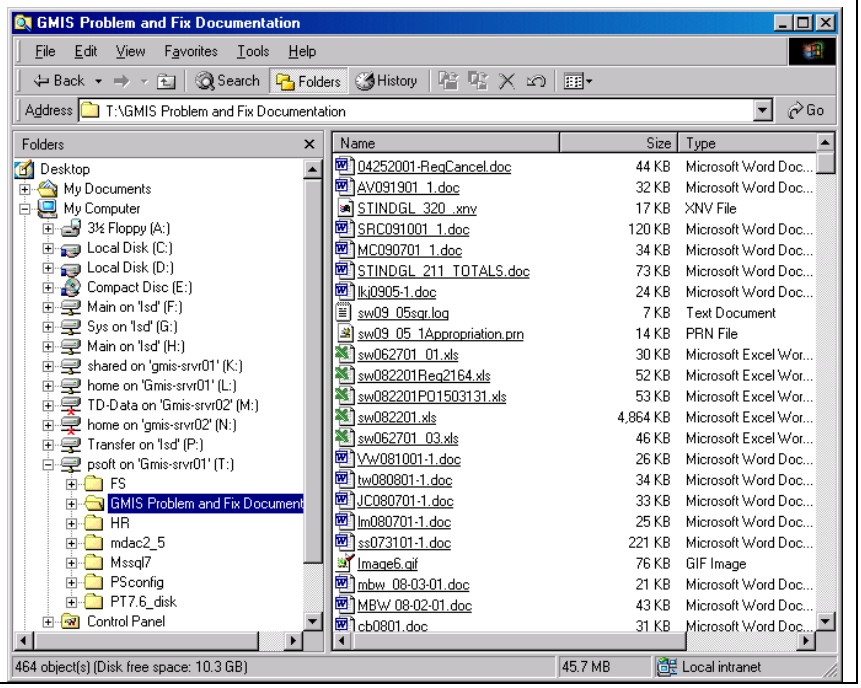
One of the most important components of describing the problem is capturing those messages that pop-up when it occurs. Right now there is no magic button to click to have that message appear for the problem-resolution staff. So we use the tried-and-true method of screen prints/panel shots with this process:

GMIS Problem and Fix Documenta...

- Copy those error messages (use Alt-PrintScreen) and the panel they were on at the time into an MS-Word document

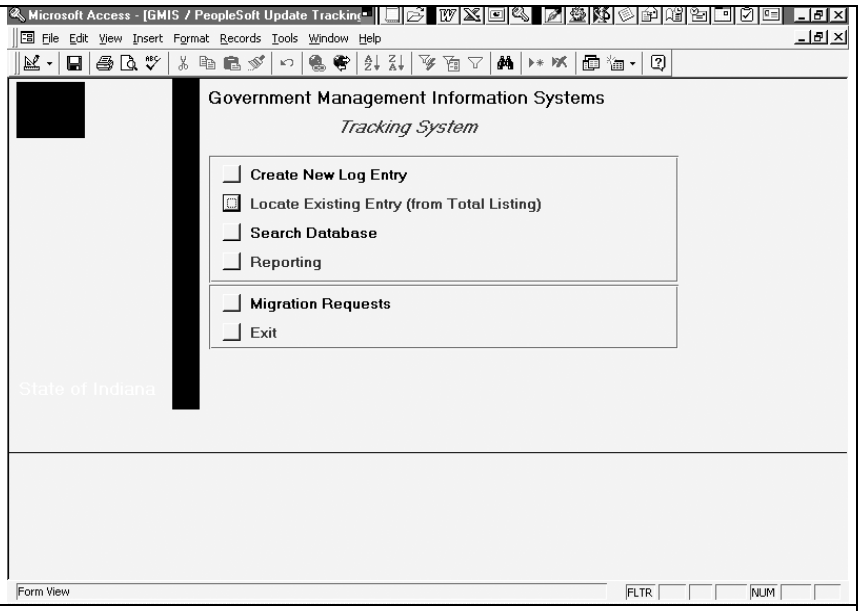
- Save that document with a name that includes your initials and the month-day and a number to indicate that day's sequence, for example:
  SC0526-1.doc

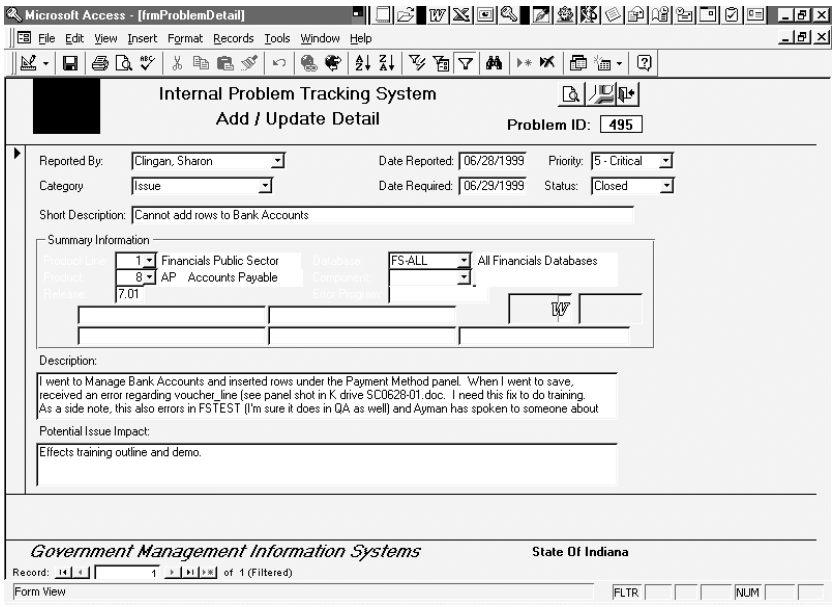
- Save it to your desktop and then drag-and-drop the document into the GMIS Problem and Fix Documentation folder. (Or, save it in the identified file server location.)

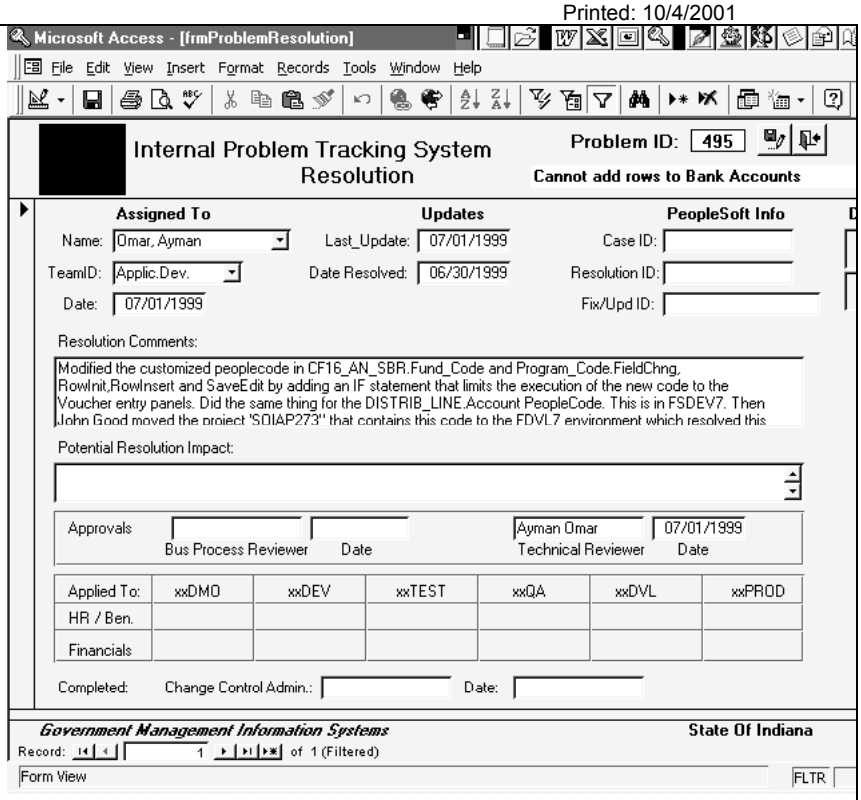


9.3 GMIS Issues Database

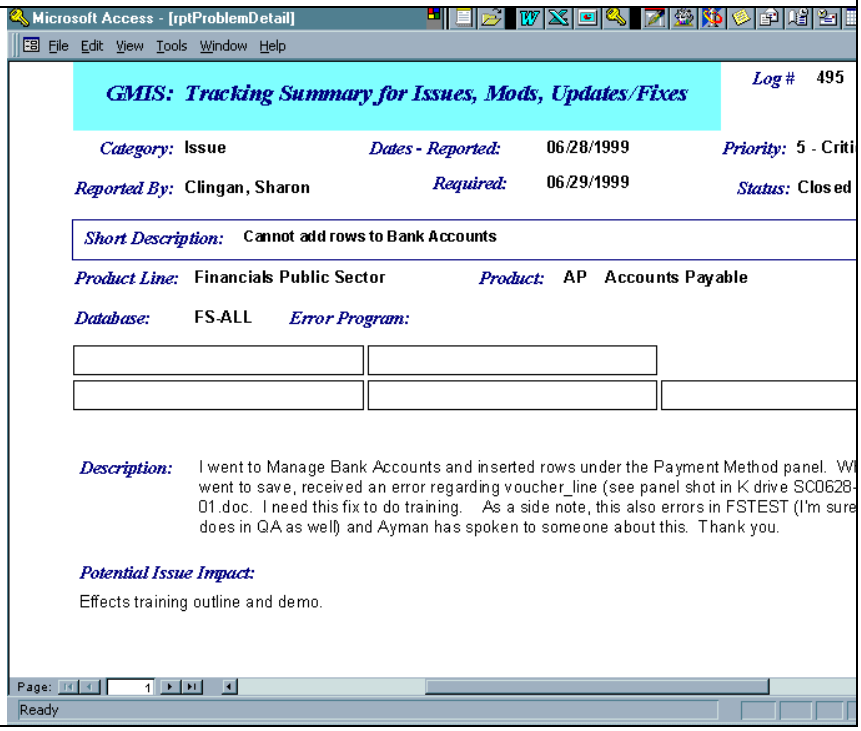
A separate tool, the GMIS Issues database, is used from this point to assign the problem to the appropriate staff resource, track the activity to solve it, and document that solution. The designated technical staff transfer the e-mail information and any supporting documentation to a record for each issue. From this database you can then update the problem statement, resolution activity, tie the problem to specific PeopleSoft fixes and updates that are in the database, and obtain a variety of reports. You can also do keyword searches to help identify potential solutions or where we have fixed a similar problem before. Generally, the technical staff will be the primary users of this database, but all GMIS team members have access to it to do their investigation or check on the status of their issue.



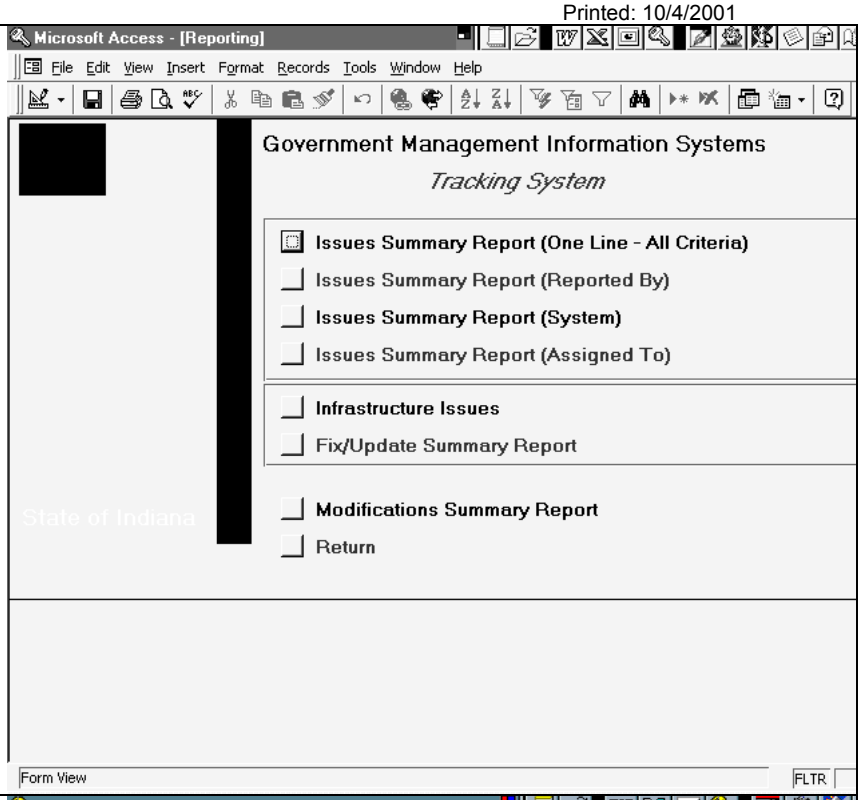


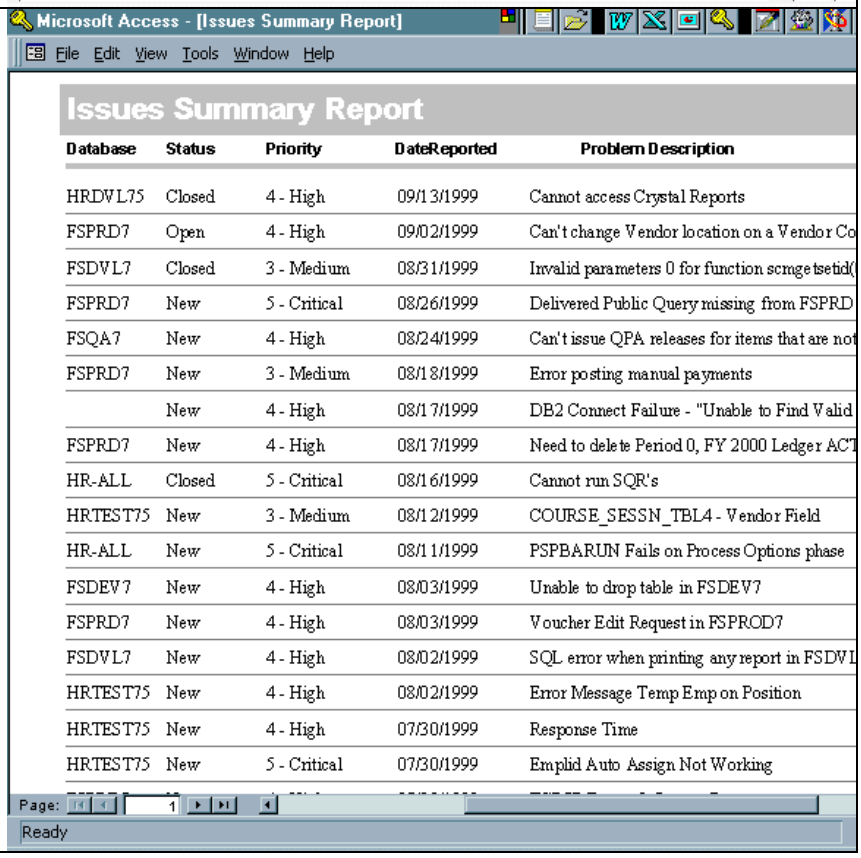


A hardcopy summary of the issue record is available from the database as shown in this example:

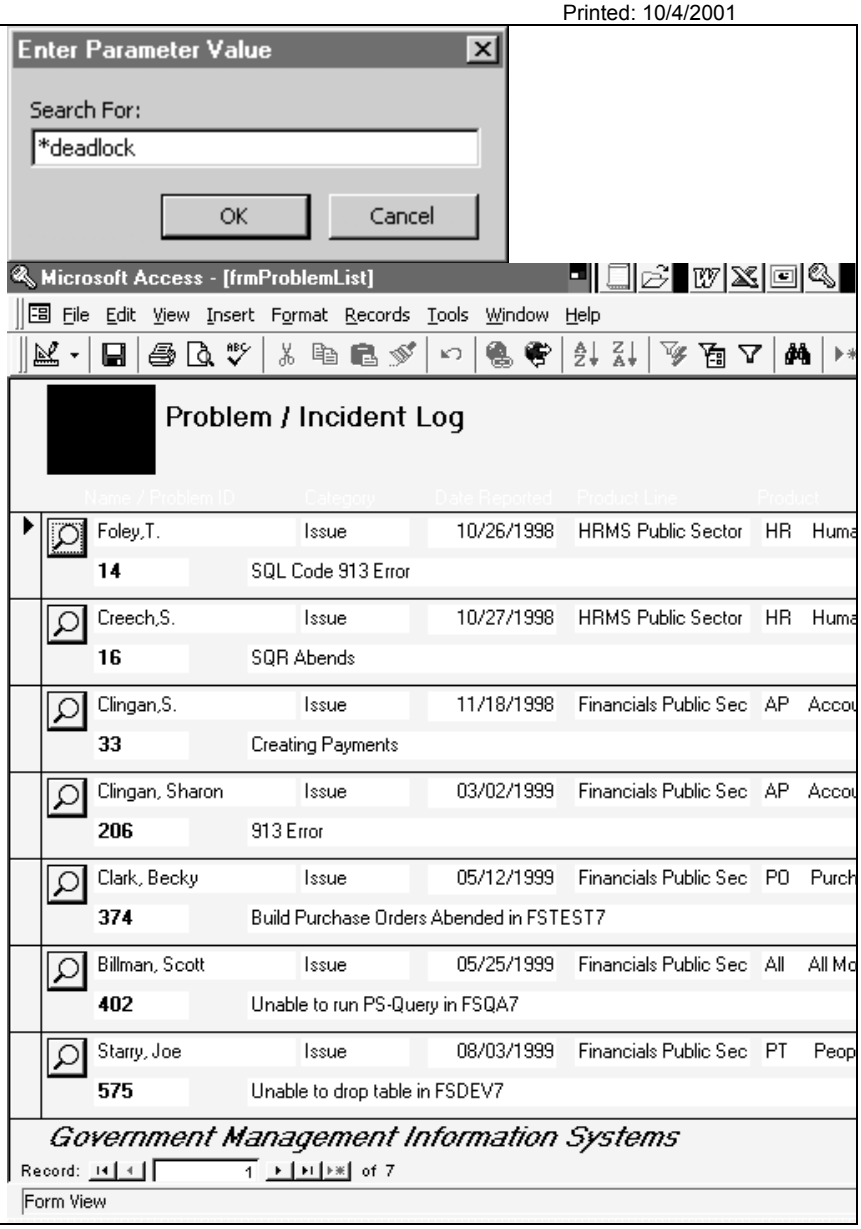


As well as a variety of reports:





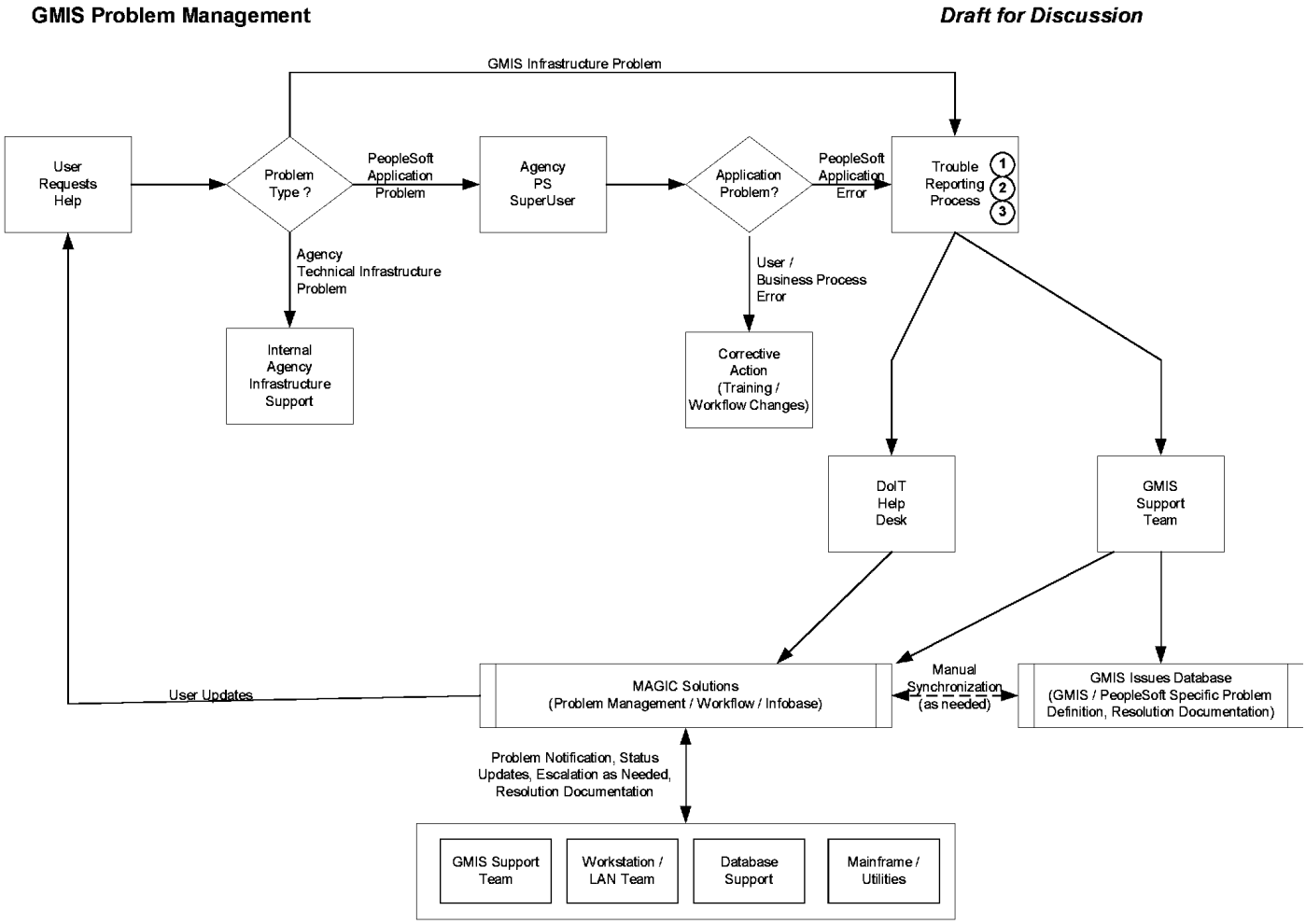
There is also a search capability to retrieve records by keyword, issues for specific databases, etc.



And because this database is also a repository for PeopleSoft Fix-Updates and our own modifications, we are able to identify activities in numerous categories that might relate to a specific problem.

It's also a workflow tool that helps us understand who has been assigned tasks and allows us to manage the priorities across different categories.
As with any tool that has a number of features, it may appear complicated. However the only requirement we have of the end users is to do the best job they can in defining their problem -- and that's filling out the Intranet form and providing screen prints. The rest of the mechanics are to help the support staff resolve the problem and evolve a base of documentation that helps us fix problems more quickly or avoid similar issues in the future.

9.4 Working a problem through the various support "teams"



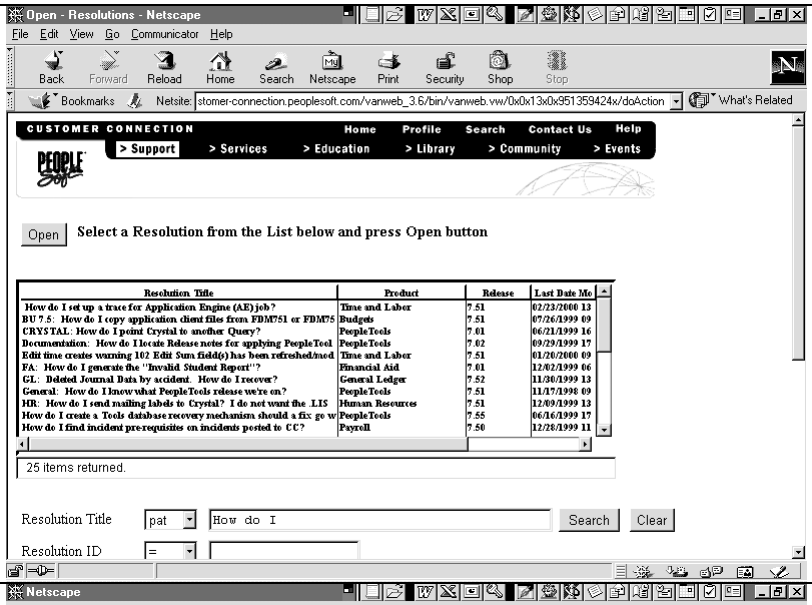
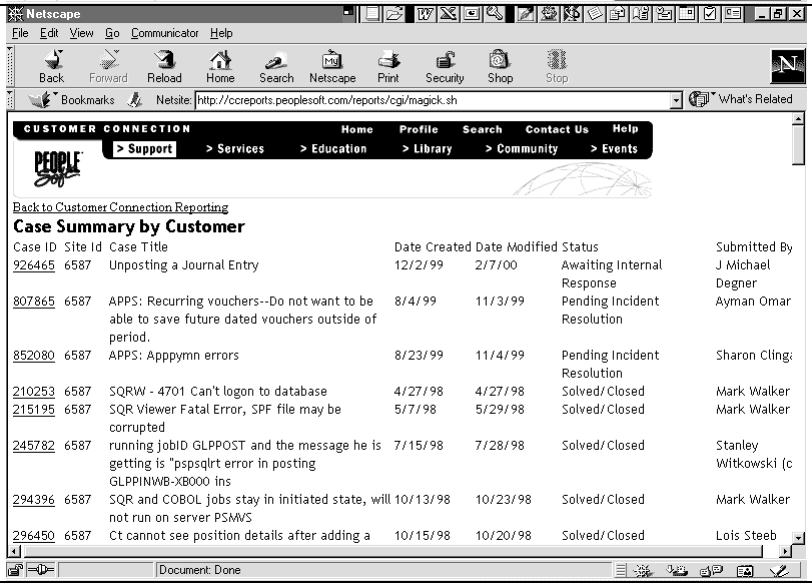
Functional	Technical

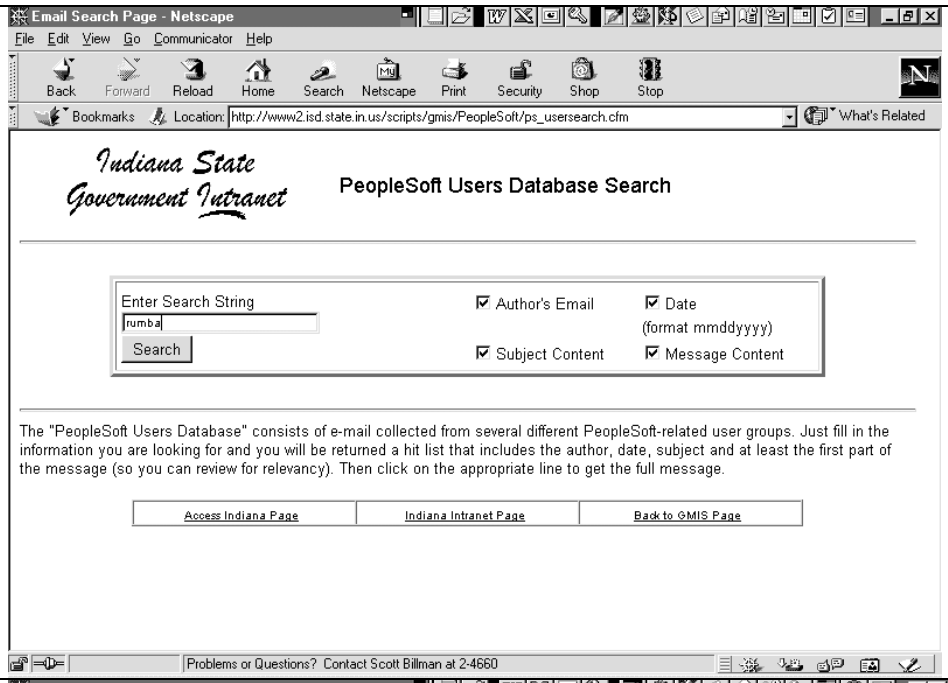
"Level 0"	
The PeopleSoft User him or herself.	
We count on the PeopleSoft user to be able to recognize certain basic characteristics about their problem in order to get it started in the right direction. However, we are willing to receive any and all user problems. For example: "PeopleSoft Requisition not printing." If the user is not able to print any type of output from their workstation (MS-Word documents, etc.), then he or she should report the problem to the agency's technical support following their internal mechanics. However, if the PC is otherwise working normally and especially if the user is receiving a PeopleSoft specific error, they should contact their designated "SuperUser" and/or report the problem via the Issue Entry mechanics.	
"Level 1"	**"Level 1"**
Agency PeopleSoft "SuperUser"	**Various Help Desk and Problem Reporting tools and methods.**
The local agency staff have been trained in the use of the PeopleSoft applications. Certain key staff have already been designated as "HR Officers" or "Procurement Officers" and often have extensive business knowledge. They can filter the problems that are "user error" vs. system problems and report those problems as appropriate	
"Level 2"	**"Level 2"**
Central Agency / GMIS Team Functional Experts	**Central Agency / GMIS Team Technical Experts**
"Level 3"	**"Level 3"**
PeopleSoft Functional Experts via Customer Connection	**PeopleSoft, IBM, Microsoft Technical Experts via Vendor Support**

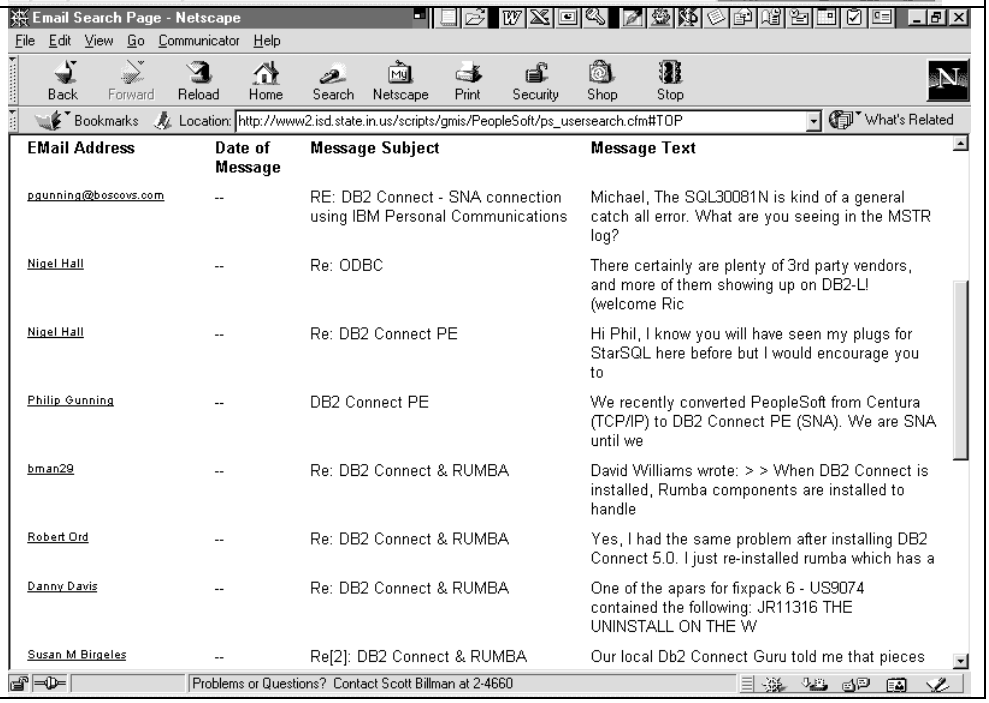
9.4.1 Level 2 Resources by Problem Type

Nature of Problem	Resource Staff
Functional	Shawn Seifert (AP & GL) Michelle Smith (AP) Mike Degner (GL) Myra Wilson (Purchasing) Jim Welsh (Billing / Asset Management) …… (HR - Recruitment) …… (HR - Benefits) …… (HR - Training Administration) …… (HR -) Robin Degner
Technical	Jim Welsh
Application Development	Mark Walker John Good Joe Starry Syl Creech Don Champion Dilip Pandya Ellen Koch
PeopleSoft System Admin.	
- PeopleSoft Maintenance	John Good
- Security	Scott Billman Mark Fitzpatrick
Network	
- Architecture	
- Support	Network Management Center Joe Starry Mark Fitzpatrick
- Tuning	
Application Server	Chris Cotcamp
File Server	
Database Server and Operating System	Bob Burns Ray Hill
MS SQL Server	Suzie Mihankhah Steve Van Slyke Crystal Smith
Workstation	Jim Welsh Joe Starry Mark Fitzpatrick

9.4.2 Level 3 Resources by Problem Type

PeopleSoft Functional Problems "How do I . . .?" Resources: PeopleSoft Customer Connection	
PeopleSoft Technical Problems "Application Engine POOBUILD Abending at PB1500.UPDTBUYR Resources: PeopleSoft Customer Connection	





Our other various vendors (IBM, Microsoft, etc.) all provide formal customer support. In addition, there are a number of "informal support" mechanisms including participation in user groups, membership on listservs, and maintaining a group of fellow customers/practitioners. We maintain a simple Intranet-based search tool to facilitate retrieval of relevant communications from a number of listservs.

9.5 Help Desk Contact Information and Hours of Operation

Submitting an Issue through the Problem Reporting mechanisms detailed earlier automatically notifies many of the appropriate staff. There will still be times when a specific call is needed.

The DoIT Help Desk (232-3251) is staffed or available by pager 24 hours a day, 7 days a week and can contact specialists as needed.

9.6 User Notifications - Status Updates

PeopleSoft system users will be provided an updated status on their reported problems on a regular basis:

- The staff working the problem will contact the user for confirmation and/or additional problem definition information.
- When a fix has been identified, the user will be contacted to test and/or confirm the resolution.
- Status of the problem (or issue) will be periodically updated in the GMIS Issues/Tracking Database.

In addition, general communications concerning the status of the system will be provided as follows:

- System outages or special conditions will be e-mailed to the GMIS Users distribution list as soon as practical.
- System status will be regularly updated on the GMIS Intranet pages.

Chapter 10. Server and Physical Infrastructure

10.1 Network and File Servers

10.1.1 File Server Administration and Configuration

This section outlines the Network Administration tasks and configuration information for the File Server specific to PeopleSoft. Included is a general overview of Security, Fail Over & Recovery, Backup & Restore, Network Operating System, Network Domains, and Error / Management Logs.

10.1.1.1 Security (Groups or how managed)

User Security and Groups are managed according to the NT Infrastructure Guidelines as dictated and/or specified by the State Board of Accounts.

10.1.1.2 Fail Over & Recovery (mirror site)

Both servers are backed up in-full daily with ArcServeIT, and backup tapes are maintained in secure vault storage for quick restoration in the event of outage.

10.1.1.3 Backup & Restore

Both file and print servers, GMIS-SRVR01 and GMIS-SRVR02, are backed up in-full daily (weekdays only) with ArcServeIT, and tapes are kept in vault storage archives. Windows NT Emergency Repair Disks (ERD) are updated monthly (two copies), with one copy being maintained by GMIS server administrators, and the other forwarded for storage in a secure vault. The ERDs assist with repair corruption of device drivers and other configurations on these servers. The two recovery situations described above are not necessarily associated with each other, but reflect two types of recovery, depending on type of outage.

10.1.1.4 Network Operating System

File and print servers GMIS-SRVR01 and GMIS-SRVR02 are run on Microsoft Windows NT Server, version 4.0, Service Pack 4 using the TCP/IP protocol. No other protocols are used. All disk partitions on both servers are formatted with the NT File System (NTFS).

10.1.1.5 Network Domains

Both file servers, GMIS-SRVR01 and GMIS-SRVR02, are member servers of the ISD-SHARED domain and are administered in accordance to the NT Infrastructure Guidelines. GMIS-SRVR01 fulfills the role of a backup domain controller in this domain, and GMIS-SRVR02 plays the role of a member server. Users with accounts not only in the ISD-SHARED domain, but also those in the ISD-NT (DoIT), IDOA,

and DOT domains, can access these file servers through network trusts. There are, at this time, no distributed files.

10.1.1.6 Error / Management Logs

GMIS file servers are constantly monitored for outage by consistent "pings," which occur every ten minutes, 24 hours a day. Several administrators are alerted by pager (and e-mail) when a ping request returns with negative information, indicating a network outage has occurred with this server. All system, security, and application errors and violations are maintained in the Windows NT Event Viewer for each individual system, and each server is reviewed daily, and on an as-needed basis. Each of the three event logs is allowed to log events chronologically for up to one megabyte (1,024 kilobytes) in a circular logging fashion, overwriting events as needed. The only other management logs maintained are concerning ArcServeIT daily backups, and work-in-progress with Systems Management Server (SMS).

10.1.1.7 Hardware Configuration

Category	Specification
Software Components	
Operating System	MS Windows NT 4, Service Pack 4
Error / Management Logs	Windows NT Event Viewer/ArcservIT/SMS
Hardware Components	
Server Name	GMIS-Srvr01 (member servers of ISD-SHARED domain)
Addresses/IP	10.1.23.42
Addresses/Hardware	00-80-5f-6f-51-37
Server Name	GMIS-Srvr02 (member servers of ISD-SHARED domain)
Addresses/IP	10.1.23.43
Addresses/Hardware	00-60-08-cd-33-90
Standards	
Security	NT Infrastructure Guidelines by State Board of Accounts

10.1.1.8 Directories

There are four main directories mapped and used for PeopleSoft applications. They are maintained on two file and print servers named GMIS-SRVR01 and GMIS-SRVR02. GMIS-SRVR01 hosts two shares called SHARED and WINAPPS, located physically at D:\shared and D:\winapps respectively. The 'SHARED' share is used for project file and active file storage, and the 'WINAPPS' share is used to hold installation files for major applications (those which are not PeopleSoft or MS SQL Server). GMIS-SRVR02 hosts two shares called HOME and PSOFT, located physically at D:\home and D:\psoft. The 'HOME' share is a storage area for users' personal data files, and it is sub-parsed to private directories for each individual GMIS user who logs into these servers from the ISD-SHARED domain. The

'PSOFT' share is the repository for all files related to PeopleSoft and MS SQL Server, including installation files, COBOL executables, scripts, help files, etc.

10.2 Application Server Administration and Configuration

This section outlines the Network Administration tasks and configuration information for the Application Server specific to PeopleSoft. Included is a general overview of Security, Fail Over & Recovery, Backup & Restore, Network Operating System, Network Domains, Error / Management Logs, and Tuxedo.

10.2.1 Tuxedo

10.2.1.1 HR –Human Resources

There is a domain set up for each database: HRDEV, HRTEST, HRQA, HRDVL, and HRPRD

Version

Tuxedo version 6.5 PeopleTools version 7.55

Configuration

Domain Configuration files are found at

\\GMIS-SRVR02\HR\%PSHOME%\APPSERV\%PSHOME%\PSAPPSRV.CFG

where %PSHOME% equals the name of the data base for the given domain.

BAT Files (PSADMIN / and the Tuxedo Domain Configuration)

DOS Batch where created so that %PSHOME% environment variable could be set dynamicaly before running the PSADMIN.EXE. These batch files are \\GMIS-SRVR02\HR\%PSHOME%-ADMIN.BAT

10.2.1.2 FS –Financial Systems

There is a domain set up for each data base: FSDEV, FSQA, FSDVL, and FSPRD. Note that Financials does not have a TEST system.

Version

Tuxedo version 6.3 PeopleTools version 7.04

Configuration

NOTE: Financials does not have the same directory structure as but will be change to match during the next PeopleTools upgrade.

Domain Configuration files are found at

\\GMIS-SRVR01\FS700\APPSERV\%PSHOME%\PSAPPSRV.CFG

where %PSHOME% equals the name of the data base for the given domain.

All domains except for FSPRDwere setup with a PeopleSoft delivered template for a small implementation (1 to 100 users). FSPRDwas setup with a medium template to accommodate 100 to 1,000 users.

BAT Files (PSADMIN / and the Tuxedo Domain Configuration)

NOTE: Financials does not have the batch files that where setup for HR but will be change to match during the next PeopleTools upgrade.

10.2.1.3 Security (Groups or how managed)

User Security and Groups are managed according to the NT Infrastructure Guidelines as dictated and/or specified by the State Board of Accounts.

10.2.1.4 Fail Over & Recovery (mirror site)

Although Fail Over is not an option (due to software version compatibility issues), we have the ability to switch the PeopleSoft users to 2-tier until the server can be repaired and brought on-line.

10.2.1.4.1 Backup & Restore

Both application servers, GMIS-APP01 and GMIS-APP02, are backed up in-full daily (weekdays only) with ArcServeIT, and tapes are kept in vault storage archives. Windows NT Emergency Repair Disks (ERD) are updated monthly (two copies), with one copy being maintained by GMIS server administrators, and the other forwarded for storage in a secure vault. The ERDs assist with repair corruption of device drivers and other configurations on these servers. The two recovery situations described above are not necessarily associated with each other, but reflect two types of recovery, depending on type of outage.

10.2.1.4.2 Network Operating System

The operating system on the Application Servers is Microsoft NT - Version 4.0. Service Pack 4 (SP4) using the TCP/IP protocol. Both partitions are formatted using NTFS.

10.2.1.4.3 Network Domains

Both application servers, GMIS-APP01 and GMIS-APP02, are member servers of the ISD-SHARED domain and are administered in accordance to the NT Infrastructure Guidelines. Other than for administration purposes, most users are oblivious to its presence because the PeopleSoft client is responsible for the connection (its not based on user accounts).

10.2.1.4.4 Error / Management Logs

GMIS file servers are constantly monitored for outage by consistent "pings," which occur every ten minutes, 24 hours a day. Several administrators are alerted by pager (and e-mail) when a ping request returns with negative information, indicating a network outage has occurred with this server. All system, security, and application errors and violations are maintained in the Windows NT Event Viewer for each individual system, and each server is reviewed daily, and on an as-needed basis. Each of the three event logs is allowed to log events chronologically for up to one megabyte (1,024 kilobytes) in a circular logging fashion, overwriting events as needed. The only other management logs maintained are concerning ArcServeIT daily backups, and work-in-progress with Systems Management Server (SMS).

Microsoft NT generates error logs that are periodically monitored and analyzed to ensure the systems are operating efficiently or correctly.

10.2.1.5 Network - Application Server

Category	Specification
Software Components	
Operating System	MS Windows NT Enterprise Edition, SP4
Error / Management Logs	Windows NT Event Viewer/ArcservIT/SMS
Tuxedo	HR - Tuxedo V 6.5 People Tools 7.55 FS - Tuxedo V 6.3 People Tools 7.04
BAT File	PSADMIN
Hardware Components	
Hardware Configuration	1GB RAM / 2-9GB HD / 30% Disk Utilization
Addresses/Server Name	GMIS-App01 (member servers of ISD-SHARED domain)
Addresses/IP	10.1.23.39 in use (10.1.23.40 backup)
Addresses/Server Name	GMIS-App02 (member servers of ISD-SHARED domain)
Addresses/IP	10.1.23.41 in use (10.1.23.42 backup)
Standards	
Security	NT Infrastructure Guidelines by State Board of Accounts

Level1	Level2	Level3	Level4	Level5
App01-fs on ‘Gmis-app01’[ ]				
	+Fsdev			
	+Fsdmo			
	+Fsdvl			
	+Fsprd			
	+Fsqa			
		-Appserv		
			-Fsqa	
				.adm

Level1	Level2	Level3	Level4	Level5
				Logs
			Unix	
			-Webmon	
				Images
		-Bin		
			-Server	
				Win86
		Cblbin		
App02-hr on 'Gmis-app02'[ ]				
	+Hrdev			
	+Hrdvl			
	+Hrprd			
	+Hrqa			

10.2.1.5.1 Hardware Configuration

Each Application Server is configured as follows:

Category	Specifications
Make / Model:	HP Lxr8000
Two hot-swappable 10,000 RPM 9GB scsi disks:	Hardware Mirrored A (3.5-inch floppy 1.44Mb) CD-Rom Drive
Keyboard:	AT Enhanced
Mouse:	PS/2-compatible
Motherboard:	Primary bus: EISA Secondary bus: PCI
Processor:	Four (4) Pentium II Xeon Processors (400 Mhz)
2 Network Interface Cards (NIC):	3COM
Memory:	Total Physical Memory: 1 GB

10.3 Database Server Administration and Configuration

10.3.1 Database Administration

This section outlines the Database Administration tasks for the MS SQL Server specific to PeopleSoft. Included are contacts, references to cloning databases, backup and recovery schedules and procedures, and software information.

SOI Contacts	Utility Services - Tad Stahl Hardware Support - Larry Andrews Database Support - Mike Johns
PeopleSoft MS SQL Server Administration	Steve Van Slyke Crystal Smith Suzie Mihankhah
Reference Material	PeopleSoft Installation and Administration for MS SQL Server

	MS SQL Server 7 ~ SQL Server Books Online Reference for Remote DRDA Requesters and Servers Call Level Interface Guide and Reference

10.3.2 MS SQL Server Backup and Recovery Information

10.3.2.1 Introduction

This purpose of this section is to document information relating to MS SQL Server backup and recovery on the host for the GMIS application. It contains:

- Criteria for designing Backup process
- Backup Schedule
- Backup and Recovery JCL
- Bibliography

10.3.2.2 Criteria for constructing Backup process

The backup and recovery scheme is based on the use of a SQL Server backup agent. The following

- Procedures and criteria were established governing backups.
- Both local and remote (off-site) copies will be generated for all test and production databases with the exception of the training database. It will utilize local copies only.
- Recoveries can consist of two types: point-in-time and current.

* Point-in-time recoveries will usually involve recovering all tables to an agreed on time supplied by the project management staff due to a data integrity error, possibly caused by malfunctioning programs. All tables will be recovered in concert to insure that referential integrity is maintained.

10.3.2.3 Backup Schedule

Backups of the GMIS application data will be taken on a schedule that insures application data can be recovered within a reasonable time-frame and at the same time provides a solution that is cost effective.

The details and mechanics of backup will vary over time as the volume of recoverable data grows and the formula for a cost-effective solution changes. A combination of full image copies and incremental image copies will be employed to achieve a balance between efficient and timely recovery and system availability. Other factors that affect the implementation of a backup solution include, but are not limited to, frequency of backups, and selection of backup media (i.e., disk or tape. Currently, production data is backed up daily while the test databases are backed up weekly. All production log files, hourly and test logs will be backed up daily.

10.3.2.4 Retention Periods for Backup Datasets

The retention periods for backup datasets are:

- Daily 7 cycles
- Weekly 7 cycles

These values may change as a part of balancing the cost of recovery versus the benefits. The SQL logs, which also play a major role in the recovery process are retained for 30 days.

10.4 Workstation Software Setup and Workstation Configuration

The detailed steps needed to install access to the network domain, install connectivity to the database and adding databases to the connect, and setting up PeopleSoft on individual workstations for access to the GMIS/PeopleSoft applications are published in the GMIS Software Installation Guide. This document can be downloaded from the GMIS website: GMIS Website - http://www2.isd.state.in.us/gmis/downloads/.

Chapter 11. Share Drive Standards

These standards are for State Agency Groups to create, maintain and share the Government Management Information Systems (GMIS) enterprise documentation for the PeopleSoft Human Resources and Financial Applications modules. This documentation is housed on a shared server maintained by the Indiana Department of Administration (IDOA) Division of Information Technology (DoIT.) Adherence this standard will improve the search for and reuse of documentation for the enterprise during upgrades and implementations of new State Agency Groups.

11.1 Directories

High Level Directories:

- Are the first path noted between the back slashes (\ \). Security rights are defined at this level.
- Can be the first and second paths noted between the back slashes (\ \ \). Security rights are defined at this level. Examples are the Information Technology Shared and Procurement Shared.

Adding New High Level Directories:

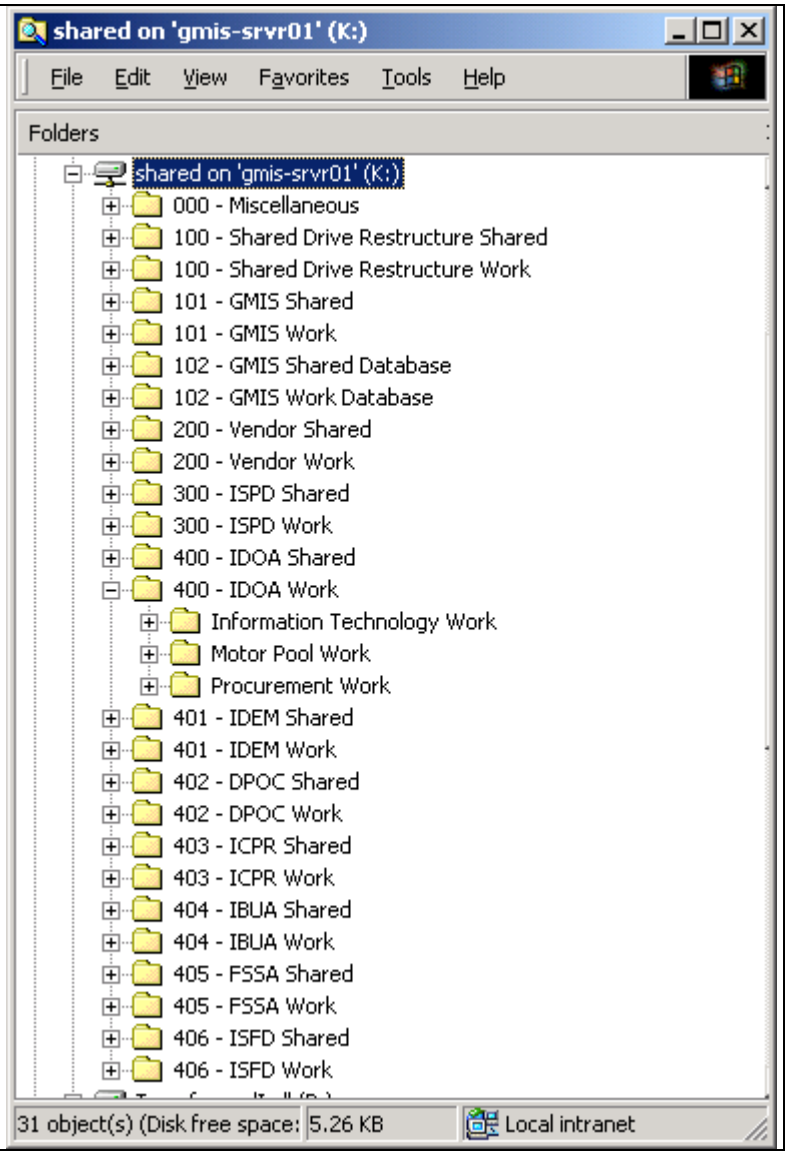
- Can be added by any member of the GMIS Group assigned to the Admin Security Group.

Sub Directories:

- Are defined as the second and subsequent paths or the third or subsequent paths following the High Level Directories.
- Are established with standard naming conventions.

Adding Sub Directories or New Sub Directories to High Level Directories:

- Can be added by any member of the High Level Directories assigned to the Admin Security Group.
- Standard naming conventions for directory paths have been used to establish the directory structures.
- Use these Standard naming conventions when establishing your own New Sub Directories.



11.2 Security Overview

The State Agency Point of Contact (POC) submits the request to add or delete their members, or their group that contains their members, to **1** security group. Members can be in either their **Admin**, **Projects**, or the global **GMIS Shared Read** Security Groups. DoIT will assign every member included in the **Admin** or **Projects** Security Groups to an **Unnamed** Security Group. The following are four types of security groups for Shared and Work Directories:

Admin Security Group ~ has read, write, change and delete access to **their** Operational Group Shared Directories and to **their** Operational Group Work Directories.

Projects Security Group ~ has read, write, change and delete access to **their** Operational Group Work Directories.

Unnamed Security Group **~** has read only access to any shared directories in the enterprise, and has create, read, update and write permissions for the \102 - Shared Database directory.

GMIS Shared Read ~ These are any other people in your domain that are not in your **Admin** or **Projects** Security Groups such as end users. This group has read only access to any shared directories in the enterprise.

11.2.1 Directory and Security Groups

Directory	Your Security group	Your Security group	Other Security group
Your agencies shared	Admin	*Unnamed*	GMIS Shared Read
Your agencies work	Admin	Your Projects	None ~ No Access
Other agencies shared	*Unnamed*	*Unnamed*	GMIS Shared Read
Other agencies work	None ~ No Access	None ~ No Access	None ~ No Access
User Types	Administrative	Projects	End

11.2.2 Security Group Rights

Security Group	Create	Read	Update	Delete
Admin	**X**	**X**	**X**	**X**
Projects	**X**	**X**	**X**	**X**
GMIS Shared Read		**X**		
Unnamed		**X**		

11.2.3 Access Groups

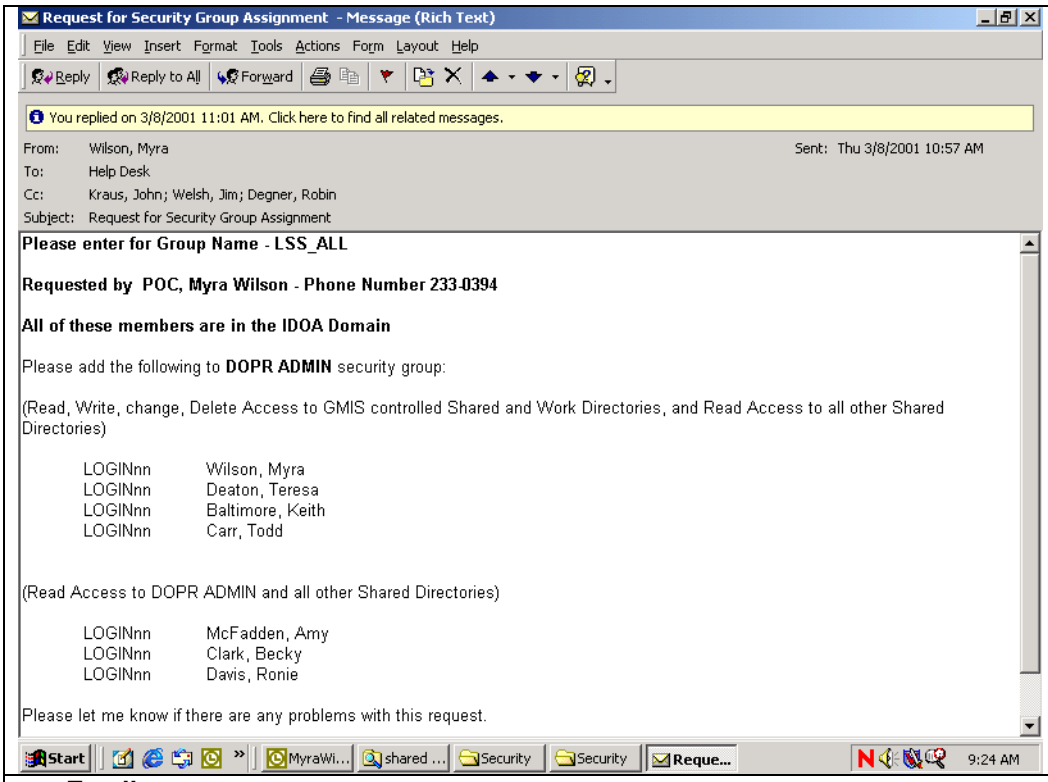
State Agency Groups and Point of Contact Directory Structures and Security Groups:

Government Management Information Systems ~ John Kraus

\000 - Miscellaneous	**GMIS Shared Admin / GMIS Shared Read**
\100 - Shared Drive Restructure Shared	**GMIS Shared Admin / GMIS Shared Read**
\100 - Shared Drive Restructure Work	**GMIS Shared Admin / GMIS Projects**

\101 – GMIS Shared	**GMIS Shared Admin / GMIS Shared Read**
\101 – GMIS Work	**GMIS Shared Admin / GMIS Projects**
\102 – GMIS Shared Database	**GMIS Shared Admin / Create, Read, Update, Delete**
\102 – GMIS Work Database	**GMIS Shared Admin / GMIS Projects**
\200 - Vendor Shared	**GMIS Shared Admin / GMIS Shared Read**
\200 - Vendor Work	**GMIS Shared Admin / GMIS Projects**
Indiana State Personnel Department ~ Syl Creech	
\300 - ISPD Shared	**ISPD Admin / GMIS Shared Read**
\300 - ISPD Work	**ISPD Admin / ISPD Projects**
Indiana Department of Administration~ Joe Starry	
\400 – IDOA Shared	**IDOA Admin / GMIS Shared Read**
\400 – IDOA Work	**IDOA Admin / IDOA Projects**
IDOA \ Division of Information Technology ~ Shawn Seifert	
\400 – IDOA Shared\Information Technology Shared	**DOIT Admin / GMIS Shared Read**
\400 – IDOA Work\Information Technology Work	**DOIT Admin / DOIT Projects**
IDOA \ Division of Motor Pool ~ *unassigned*	
\400 – IDOA Shared\Motor Pool Shared	**DOMP Admin / GMIS Shared Read**
400 - IDOA Work\Motor Pool Work	**DOMP Admin / DOMP Projects**
IDOA \ Division of Procurement	
\400 – IDOA Shared\Procurement Shared	**DOPR Admin / GMIS Shared Read**
\400 – IDOA Work\Procurement Work	**DOPR Admin / DOPR Projects**
Indiana Department of Environmental Management	
\401 – IDEM Shared	**IDEM Admin / GMIS Shared Read**
\401 – IDEM Work	**IDEM Admin / ISPD Projects**
Data Processing Oversight Commission ~ Scott Billman	**ITOC???**
\402 – DPOC Shared	**DPOC Admin / GMIS Shared Read**
\402 – DPOC Work	**DPOC Admin / DPOC Projects**
Indiana Commission on Public Records ~ Scott Billman	
\403 – ICPR Shared	**ICPR Admin / GMIS Shared Read**
\403 – ICPR Work	**ICPR Admin / ICPR Projects**
Indiana State Budget Agency ~ Andy Schlosberg	
\404 – IBUA Shared	**IBUA Admin / GMIS Shared Read**
\404 – IBUA Work	**IBUA Admin / IBUA Projects**
Family and Social Services Administration ~ *unassigned*	
\405 – FSSA Shared	**FSSA Admin / GMIS Shared Read**
\405 – FSSA Work	**FSSA Admin / FSSA Projects**
Indiana School for the Deaf ~ Scott Billman	
\406 – ISFD Shared	**ISFD Admin / GMIS Shared Read**
\406 – ISFD Work	**ISFD Admin / ISFD Projects**

11.2.4 Assigning Members to Security Groups



Email

1. Email the request to the DoIT Help Desk (Exchange clients on DoIT) or helpdesk@doit.state.in.us
2. cc: John Kraus, Veronica Moore, Judy Donahue, Christine Spicuzza
3. DoIT Help Desk sends completion notices when done.

Entries

4. Subject: “Request for Security Group Assignments”
5. “To: Help Desk, Please enter for Group Name = LSS_ALL”
6. The message ‘ Requested by POC’
7. The POC
8. The POC phone number
9. The member to be added or deleted
10. Domain
11. Last Name
12. First Name
13. Login ID
14. The Security Group that the member is to be added to or deleted from (**Admin *or* Projects *or* GMIS Shared Read** Security Group)
15. **IF** the requesting State Agency or Operational Group maintains their own members under their own Groups, send that Group Name and the Security Group it is to be added to or deleted from in place of the members Domain, Last Name, First Name and Login ID.

Other Requests

16. The agency POC can add new subdirectories (see section **1.2 Directories)**.
17. The GMIS Group POC can add new high level directories requested by agencies.
18. Email the DoIT Help Desk with a complete description of the problem, the exact error, and exactly where you were for any other problems.

11.3 Using the New Share Drive Structure and Security

11.3.1 Structure Overview:

11.3.1.1 **New Files / Projects Model:**

The new share drive restructure provides standardized structures for files developed in new projects. Members of the Project Security Group use their Work Directories where multiple work versions of files may be developed. Members of the Admin Security Group can develop files in the Work Directories, but are the only members who can move the final version of the files to their Shared Directories.

11.3.1.2 **Existing Files Model:**

These are the current High Level Directories on the shared drive that have been reformatted into the new Shared Directories on the shared drive and use new Security Access groups.

11.3.1.3 **Combined Files Model:**

This is a combination of the New Files / Project Model and the Existing Files Model. Some of the files / folders initially moved to the new Shared Directories may be copied / moved to other directories in the new Shared Directories.

11.3.2 Document Life Cycle Flow:

11.3.2.1 **GMIS WEB Site Model:**

These files are in the Shared Directories. They are the final GMIS Enterprise version used for the GMIS WEB Site.

11.3.2.2 **New Files Model:**

When State Agencies Groups are implemented / maintained, and as their Groups are established on the GMIS Shared Drive, work deliverables developed in their Work Directories for their projects need to be moved to their Shared Directories. The intent is to facilitate cloning of existing files from the other Shared Directories and to eliminate the need to start new files from scratch. Multiple implementations do not need to cost the state for similar deliverables from different vendors.

11.3.2.3 **Existing Files Model:**

These are files in existence prior to the restructure that are referenced and may not be maintained.

11.3.2.4 **Combined Files Model:**

If these files are updated consistently as in the Existing Files Model, the State Agencies Groups with the approval of management and the enterprise, would take ownership of them and move them to the New Files Model.

11.3.3 Required Deliverables:

As State Agencies / Operational Groups are implemented / maintained, and as their Operational Groups are established on the GMIS Shared Drive, work deliverables developed in their Work Directories for their projects need to be moved to their Shared Directories.

These are required deliverables that need to be shared with the entire GMIS enterprise since this information may have an impact on upgrades and implementations of other State Agencies / Operational Groups.

Some of the directories are established as noted under the Structure section. Other directories that need to be established are noted under the Processes section, Adding Sub Directories or New Sub Directories to High Level Directories.

An example would be the \401 – idem shared\ directory where training materials for their 4 applications are required. Other directories to be added for the Required Deliverables are:

- \functional\deployment\, \functional\development\, \functional maintenance\, \functional\peoplesoft\, \functional\standards and procedures\, \functional\testing\, \functional\training\,
- \technical\deployment\, \technical\development\, \technical maintenance\, \technical\peoplesoft\, \technical\standards and procedures\, \technical\testing\, \technical\training\,
- \management\project administration\, management\project plans\,
- \dig\dictionary\, \dig\documentation\, \dig\meetings\, \dig\schedules\, \dig\templates\, \dig\tools\.

11.3.4 Adjustments:

11.3.4.1 **Directories:**

after the initial move to the new restructure, some directories may belong under other directories. These can be copied from the current location to the new location, and if appropriate or wholly owned by another State Agency or Operational Group, can be deleted from the old location.

11.3.4.2 **Groups:**

if members their State Agency or Operational Group works on projects for another State Agency or Operational Group, with management approval, they need to contact the POC and request membership in their Security Group for the duration of the project.

11.3.5 Version Control:

11.3.5.1 Tools

There are no tools in place at this time for Version Control.

11.3.5.2 Back up Responsibility

The State Agency Groups should keep their own backup copies while developing documentation in their work directories and ensure that the most current version is copied to their share directories for sharing with the enterprise. Examples of this process can be found in Chapter 13 Quick Reference Update Procedure.

Chapter 12. Training Standards

12.1 General Training Structure

One of the benefits the single enterprise system brings to the State of Indiana is that much of the system maintenance, user support, and information distribution can be done in a coordinated, centralized manner. Retaining the integrity of the single enterprise system and fully realizing its benefits requires the same coordinated, centralized approach to training our personnel on the use and support of the PeopleSoft applications.

- The knowledge required to use and support the PeopleSoft applications falls into three general categories:
- Knowledge *specific to the State of Indiana* – this category includes knowledge of how the State does business: its rules, regulations, procedures, and practices, and how to use PeopleSoft within those bounds.
- Knowledge *specific to PeopleSoft* – this category refers to knowledge of how PeopleSoft applications operate: navigation, buttons, panels, processes, and how they interact.
- *Other* knowledge – this category covers any knowledge integral to the support of GMIS applications and customers that are not included in the two categories above.

The training requirements for the GMIS community can be seen as "curriculums" specific to each of several user families. For both the State of Indiana and the PeopleSoft specific categories, each curriculum consists of one or more of the following:

- *Formal classes*, which may be developed and delivered by either State and/or vendor resources,
- *Self-help* materials, such as Quick Reference documents,
- *Self study* of manuals, procedures, or other documentation, and
- *Informal instruction,* usually by agency super users or the GMIS support team.

Training in the topics and skills outlined in this section are considered standard requirements for the user families shown.
Standards regarding the content, format, and preparation of State of Indiana developed training materials are presented later in this chapter.

12.1.1 All PeopleSoft Agency Users, Functional and Technical Analysts

12.1.1.1 Knowledge Specific to the State of Indiana

12.1.1.1.1 Self Help

- PeopleSoft Training Navigation Tutorial. To take this tutorial, call the DoIT Help Desk at 232-3251 and request assistance
- Quick References
- Application Overviews
- General Information topics (to be developed)

12.1.1.1.2 Self Study

- GMIS Standards and Procedures Manual, available on GMIS web site and the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures
- Introduction
- Problem Reporting Standards

12.1.1.1.3 Informal Instruction

- GMIS Web Site

12.1.2 Agency Personnel

12.1.2.1 Super Users

12.1.2.1.1 Knowledge Specific to the State of Indiana

12.1.2.1.1.1 Formal Classes

Procurement PeopleSoft class (for Purchasing users)

HR Classes (for HR users)

HRMS

Benefits

Training Module

Query

12.1.2.1.1.2 Self Help

Quick References and Speed Scripts

All

12.1.2.1.1.3 Informal Instruction

Query training for Financials users

Issue reporting

Using the Issues database

12.1.2.2 End Users

12.1.2.2.1 Knowledge Specific to the State of Indiana

12.1.2.2.1.1 Formal Classes

Procurement PeopleSoft class (for Purchasing users)

HR Classes (for HR users)

HRMS

Benefits

Training Module

Query

12.1.2.2.1.2 Self Help

Quick References and Speed Scripts

Application specific topics as needed

12.1.2.3 Managers

12.1.2.3.1 Knowledge Specific to the State of Indiana

12.1.2.3.1.1 Self Help

Quick References detailing the use of the query function (to be developed)

12.1.2.4 IT Support

12.1.2.4.1 Knowledge Specific to the State of Indiana

12.1.2.4.1.1 Self Help

PeopleSoft Installation Guide, available at URL http://www2.isd.state.in.us/gmis/downloads/

GMIS Standards and Procedures Manual, available on GMIS web site and the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures

Security: Operator Maintenance

12.1.2.4.1.2 Self Study

GMIS Roles and Responsibilities Definition available in Appendix H : PeopleSoft Support Roles

12.1.3 GMIS Team

12.1.3.1 Functional Analysts

12.1.3.1.1 Knowledge Specific to the State of Indiana

12.1.3.1.1.1 Formal Classes

PS Procurement Class

HR Classes

HRMS

Benefits

Training Module

Query

12.1.3.1.1.2 Self Help

GMIS Financials Set-up Recipes, available on the GMIS shared drive in folders GMIS Shared\Functional\Setup Recipes\New Agency Implementations

12.1.3.1.1.3 Self Study

GMIS Standards and Procedures Manual, available on GMIS web site and the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures

Introduction

Implementation Standards

Development Standards

Testing Standards

Change Control Standards

Security Standards

Problem Reporting Standards

Training Standards

GMIS Roles and Responsibilities Definition available in Appendix H : PeopleSoft Support Roles

Accounting Manual for State Agencies, available on State Board of Accounts Internet site

Contracting Manual, available on IDOA Procurements Intranet site

Procurement Manual, available on IDOA Procurements Intranet site

HR "Manual", comprised of most of the topics on the State Personnel Department intranet site

Payroll Manual, available from the State Payroll Office of the Auditor of State

12.1.3.1.1.4 Informal Instruction

Mentored walk through of Financials Quick References

Use of GMIS Issues Database

12.1.3.1.2 Knowledge Specific to PeopleSoft

12.1.3.1.2.1 Formal Classes

Intro to PeopleSoft

PeopleTools I

For Report Analysts:

Introduction to Query (1 day)

Query Advanced (1 day)

Introduction to Crystal (1 day)

Crystal Advanced (1 day)

PS/nVision Using Queries (4 days)

Intro to OLAP (2 days)

12.1.3.1.2.2 Self Help

PS PeopleBooks: Using PeopleBooks

12.1.3.1.2.3 Self Study

PS Business Process Maps, available on the Functional page of the GMIS intranet site

PS PeopleBooks

Customer Connection, begin with User Guide (click on Help button)

12.1.3.1.3 Other Knowledge

12.1.3.1.3.1 Soft Skills

Presentation Skills

Documentation/Technical Writing

Training

12.1.3.1.3.2 Business Function Skills

Business Process Analysis

12.1.3.1.3.3 IT Skills

Project/Resource Management

Requirements Analysis

Testing

Version Control

Data Relationships

12.1.3.1.3.4 Tools

Word

MS Project

PowerPoint

Excel

Visio

12.1.3.1.3.5 Training Resources

DoIT's Computer Learning Center

Personnel's Training Center

PeopleSoft's Customer Connection

Business education web sites: fredpryor.com; learningtree.com; skillpath.com; pmi.com

Procurement's Streamlining class

12.1.3.2 Technical Analysts

12.1.3.2.1 Knowledge Specific to the State of Indiana

12.1.3.2.1.1 Self Study

GMIS Standards and Procedures Manual, available on the GMIS web site and on the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures

All Chapters

GMIS System Topography, available in Appendix G: PeopleSoft Technical Architecture

GMIS Roles and Responsibilities Definition available in Appendix H : PeopleSoft Support Roles

Services Administrators

GMIS Problem Resolution Roadmap (to be developed)

Security Analysts

Procurement Security Matrix

HR Security Matrix

Setup Recipes

12.1.3.2.1.2 Informal Instruction

Use of GMIS Issues Database

Use of DoIT's Help Desk process and database

Security Analysts

RACF Security Access Requests

12.1.3.2.2 Knowledge Specific to PeopleSoft

12.1.3.2.2.1 Formal Classes

Developers

PeopleTools I (5 days)

PeopleTools II (5 days)

Process Scheduler (2 days)

PeopleSoft Portal Solutions (PS 8) (2 days)

PeopleCode (5 days)

Business Process Design (4 days)

Services Administrators

PeopleSoft Server Administration (4 days)

Data Management Tools (3 days)

PeopleSoft Database Upgrade (PS 8) (2 days)

PeopleSoft Security (2 days)

Application Engine (3 days)

Integration Tools ((PS 8) (4 days)

Report Developers

SQR I (4 days)

SQR II (4 days)

and/or

Introduction to Query (1 day)

Query Advanced (1 day)

Introduction to Crystal (1 day)

Crystal Advanced (1 day)

PS/nVision Using Queries (4 days)

Intro to OLAP (2 days)

Security Analysts

PeopleSoft Security (2 days)

12.1.3.2.2.2 Self Study

Customer Connection, begin with User Guide (click on Help button)

12.1.3.2.3 Other Knowledge

12.1.3.2.3.1 IT Skills

Relational Databases

SQL

Troubleshooting

Testing

Version Control

12.1.3.3 Database Analysts

12.1.3.3.1 Knowledge Specific to the State of Indiana

12.1.3.3.1.1 Self Study

GMIS Standards and Procedures Manual, available on GMIS web site and on the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures

All chapters

GMIS System Topography, available in Appendix G: PeopleSoft Technical Architecture

GMIS Roles and Responsibilities Definition available in Appendix H : PeopleSoft Support Roles

12.1.3.3.2 Knowledge Specific to PeopleSoft

12.1.3.3.2.1 Formal Classes

PeopleSoft Server Administration (4 days)

12.1.3.3.2.2 Self Study

Customer Connection, begin with User Guide (click on Help button)

12.1.3.3.3 Other Knowledge

12.1.3.3.3.1 IT Skills

Database Administration skills appropriate for the SQL Server platform

12.1.3.4 LAN Support Analysts

12.1.3.4.1 Knowledge Specific to the State of Indiana

12.1.3.4.1.1 Self Help

GMIS Problem Resolution Roadmap (to be developed)

12.1.3.4.1.2 Self Study

GMIS System Topography, available in Appendix G: PeopleSoft Technical Architecture

GMIS Roles and Responsibilities Definition available in Appendix H : PeopleSoft Support Roles

GMIS Standards and Procedures Manual, available on GMIS web site and on the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures

Introduction

Application Architecture

Security Standards

Problem Reporting Standards

Server and Physical Infrastructure

12.1.3.4.2 Knowledge Specific to PeopleSoft

12.1.3.4.2.1 Informal Instruction

PeopleSoft configuration process (general knowledge)

12.1.3.4.3 Other Knowledge

12.1.3.4.3.1 Formal Classes

Hardware Platform: ES7000

Administration and Operations

Clustering

Storage

SAN

NaviSphere

Network Software: NT and WIN2000

NT and/or WIN2000 base

NT4 Clustered and/or 2000 Clustered

Citrix

12.1.3.4.3.2 Other

Switches and Networks (general knowledge)

ODBC Connectivity (general knowledge)

SQL 7 and/or SQL 2000 (general knowledge)

12.1.3.5 Desktop Support Analysts

12.1.3.5.1 Knowledge Specific to the State of Indiana

12.1.3.5.1.1 Self Help

PeopleSoft Desk-top Install Guide

GMIS Problem Resolution Roadmap (to be developed)

12.1.3.5.1.2 Self Study

GMIS Standards and Procedures Manual, available on GMIS web site and on the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures

Introduction

Application Architecture

Security Standards

Problem Reporting Standards

Server and Physical Infrastructure

GMIS System Topography, available in Appendix G: PeopleSoft Technical Architecture

GMIS Roles and Responsibilities Definition available in Appendix H : PeopleSoft Support Roles

12.1.3.5.1.3 Informal Instruction

Use of GMIS Issues Database

Use of DoIT's Help Desk process and database

12.1.3.6 Help Desk Support

12.1.3.6.1 Knowledge Specific to the State of Indiana

12.1.3.6.1.1 Self Help

GMIS Problem Resolution Roadmap (to be developed)

12.1.3.6.1.2 Self Study

GMIS Roles and Responsibilities Definition available on the GMIS web site and in Appendix H : PeopleSoft Support Roles

GMIS Standards and Procedures Manual, available on GMIS web site and on the GMIS shared drive\101 - GMIS Shared\Technical\Standards and Procedures

Introduction

Security Standards

Problem Reporting Standards

GMIS System Topography, available in Appendix G: PeopleSoft Technical Architecture

12.2 Quick References

12.2.1 Purpose

Quick References are training materials designed to instruct personnel in the use of PeopleSoft for the basic essential system-based processes for each application. They are intended to serve as guides and memory refreshers for using PeopleSoft in the State of Indiana's everyday business.

12.2.2 Content

Quick References describe the navigation, data entry, and verification steps of commonly used processes and transactions of interest to many agencies. They specify options that are consistent with State of Indiana procurement and accounting rules. They outline practices that have proven effective:

- In other agencies, or
- As interfaces with entities inside and outside the PeopleSoft arena, such as the Procurement Division, the Auditor of State, vendors, and banks.

It is important to note a few things Quick References are *not* designed to provide:

- They do not present every possible activity or option.

- In general, they do not explain how to correct errors nor describe how to resolve situations that didn't produce the expected results.
- They do not describe the underlying principles and supporting activities required to accomplish an agency's business and satisfy the State's accounting requirements.

12.2.3 Organization

12.2.3.1 Naming / Numbering

Quick References are given a succinct title reflecting the function or process described and a document name (filename) that uses a combination of the acronym for the application and an assigned number. Numbers are assigned so that a sequential list of the documents groups logically related items together. When new documents are written, lower-case alphabetic suffixes can be appended to the numbers to accomplish this logical grouping. Some examples are:

Document Name	Document Title
AP_203	Run Pay Cycle
AP_203a	Pay Cycle Approval
AP_204a	Print SDO Checks
AP_204b	Create SDO Disk for Auditor
AP_204c	Create Auditor Diskette

It is important to develop separate Quick References for those common processes that are executed from different points in the system or as parts of various other processes and/or functions. These can then be referred to from other Quick References when those processes are needed. Separating these processes avoids repetitious documentation. Examples of such processes are budget checking, voucher posting, and checking the Process Monitor.

12.2.3.2 Quick Reference Master List

A document will be maintained that lists the names and titles of all active Quick References plus any planned for future development. This document will be used as the basis for the page on the GMIS web site that links to the individual Quick Reference documents.

12.2.3.3 Change History

A document will be maintained and available on the GMIS web site that lists brief descriptions of updates to the Quick References by date, name, and title. Identify new documents as "Initial publication" followed by a brief description of the content. The purpose of this document is to allow interested parties to identify newly published and modified Quick References so they can determine when they need to review specific documents or processes.

In addition, a simple list will be maintained of all Quick Reference documents and the date each was last updated.

12.2.3.4 Application Overview

A Quick Reference Overview will be written for each PeopleSoft application in use by the State of Indiana. The Overview will address general information about the application, summarize the major processes covered by the individual documents, cover relationships between the processes, point out important considerations such as a required sequence of events, and include any other pertinent topics.

12.2.3.5 Table of contents

Each Overview document will begin with a sequential list of Quick Reference names and titles for the particular application, which will serve as a Table of Contents for the application.

12.2.4 Format

Quick References accomplish their purpose by using panel illustrations alongside step-by-step instructions. Each Quick Reference is a separate Word document. See page illustration below.

12.2.4.1 Titles

Quick References have one or two title lines:

- The application title, which is optional, is usually the application name, such as General Ledger or Billing. Or it may describe a wide range of processes within an application, such as Paying Invoices.
- The document title, which is required, describes the topic of the document.

12.2.4.2 Opening Remarks

Most Quick References begin with a few remarks about the process and how it fits in with the overall business flow. Special considerations, constraints, prerequisites, and materials needed may also be addressed at this point.

12.2.4.3 Table

The basic format for all Quick References (except the Overviews, master list, and change history) is a two-column table.

- The left column is used for identifying the steps and displaying the panel shots, and is numbered in outline style so that cells are consecutively lettered.

  To set or reset the numbering, select the column (Table, Select, Column) then select the numbering format (Format. Bullets and Numbering, Outline Numbered, select the bottom right option). Click the Continue Previous List button if you are restarting an interrupted series of letters.
- The right column contains detailed instructions for each step in the process. Each cell will contain one or more points; points are numbered consecutively from cell to cell.

To set or reset the numbering, select the column (Table, Select, Column) then select the numbering format (Format. Bullets and Numbering, Numbered, select the bottom right option). Click the Continue Previous List button if you are restarting an interrupted series of numbers.

12.2.4.4 Header and Footer

All Quick References will include document header and footer information as follows:

- Header:

Document name (Header and Footer, Insert Auto Text, Filename); flush to left margin.
Document title; flush to right margin. This may be an abbreviated version when the document title is lengthy.

- Footer:

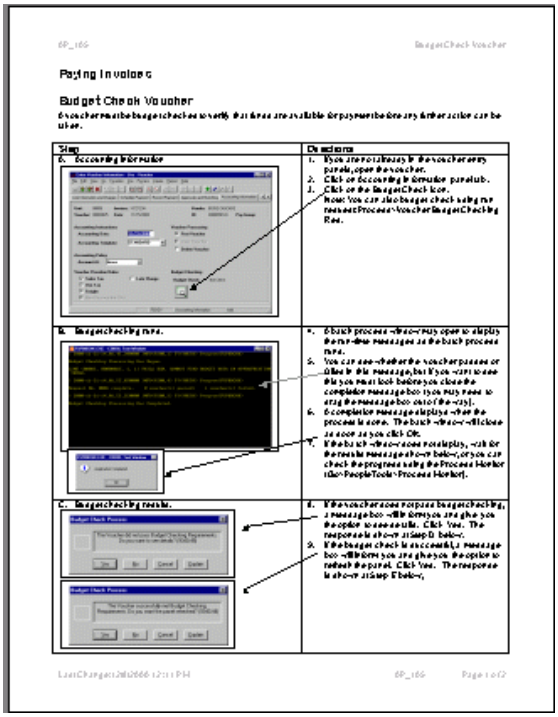
Last save date (use Insert, Field, Date and Time, SaveDate); flush to left margin.
Page number (Header and Footer, Insert Auto Text, Page X of Y); flush to right margin. Note that page numbers begin with 1 for each Quick Reference.
Document name (Header and Footer, Insert Auto Text, Filename), slightly left of page number. This is the connection to the Table of Contents in the Application Overview when Quick References are printed and placed in a binder.

12.2.4.5 Panel Shots

Images of significant panels and screens are displayed in each Quick Reference. Each panel image is placed inside a text box in the left column of the table format. Using text boxes simplifies the placement and anchoring of the images, making it easy to inset, delete, and move them without impacting other images and components in the document. In general, panel shots are made using the Alt+Print Scrn keys so that the image includes the active panel only, not the entire desktop, although images of the desktop (Print Scrn key) may be used when appropriate.

Other drawing tools and figures, such as arrows and brackets (available on the Word drawing toolbar), may be used for clarification. Keep in mind, however, that such tools must render well in black and white, so the document is equally clear when printed. For example, it may be necessary to make an arrow gray, so that it shows both on white (near text) and on black (crossing a dark image).

12.2.4.6 Illustration



Header Application Title
Document Title
Opening Remarks

Two-column Table

Panel Image in Text Box

Footer

12.3 Recurring Presentations (Demonstrations, Classes, Exhibits)

12.3.1 Purpose

12.3.2 Content

12.3.3 Scheduling/Posting

12.3.4 Site Preparation

12.3.5 Materials Maintenance

Chapter 13. Maintenance Procedures

13.1 Quick References

This section outlines the steps required to build or modify, test, and implement a Quick Reference document, including steps to ensure adequate backup protection, limited version control, and posting to the GMIS web-site.

In general, the steps are: build or modify the document, test the document, obtain approval, backup the document, record the update in the history log, move the document to the production library, move it to the web library, link it to the web-site, test the web-site, and clean up the files no longer needed.

Steps vary slightly for new and modified documents, and directory locations are different for application specific vs. general information topics.

13.1.1 Summary of Process – Who Does What When

The diagram on the following page illustrates the process, showing the events, their sequence and the responsible parties.

13.1.2 Build/Modify

13.1.2.1 Modify an existing Quick Reference

When ready to begin, copy the original Quick Reference from the production folder to the work folder and make changes to the copy.

- From Production folder:

For an application specific topic:

K:\101 – GMIS Shared\Functional\Applications*application name*\Training Materials\Quick References\ *filename*.doc

For a General Information topic:

K:\101 – GMIS Shared\Functional\Training\Quick References\ *filename*.doc

- To Work folder:

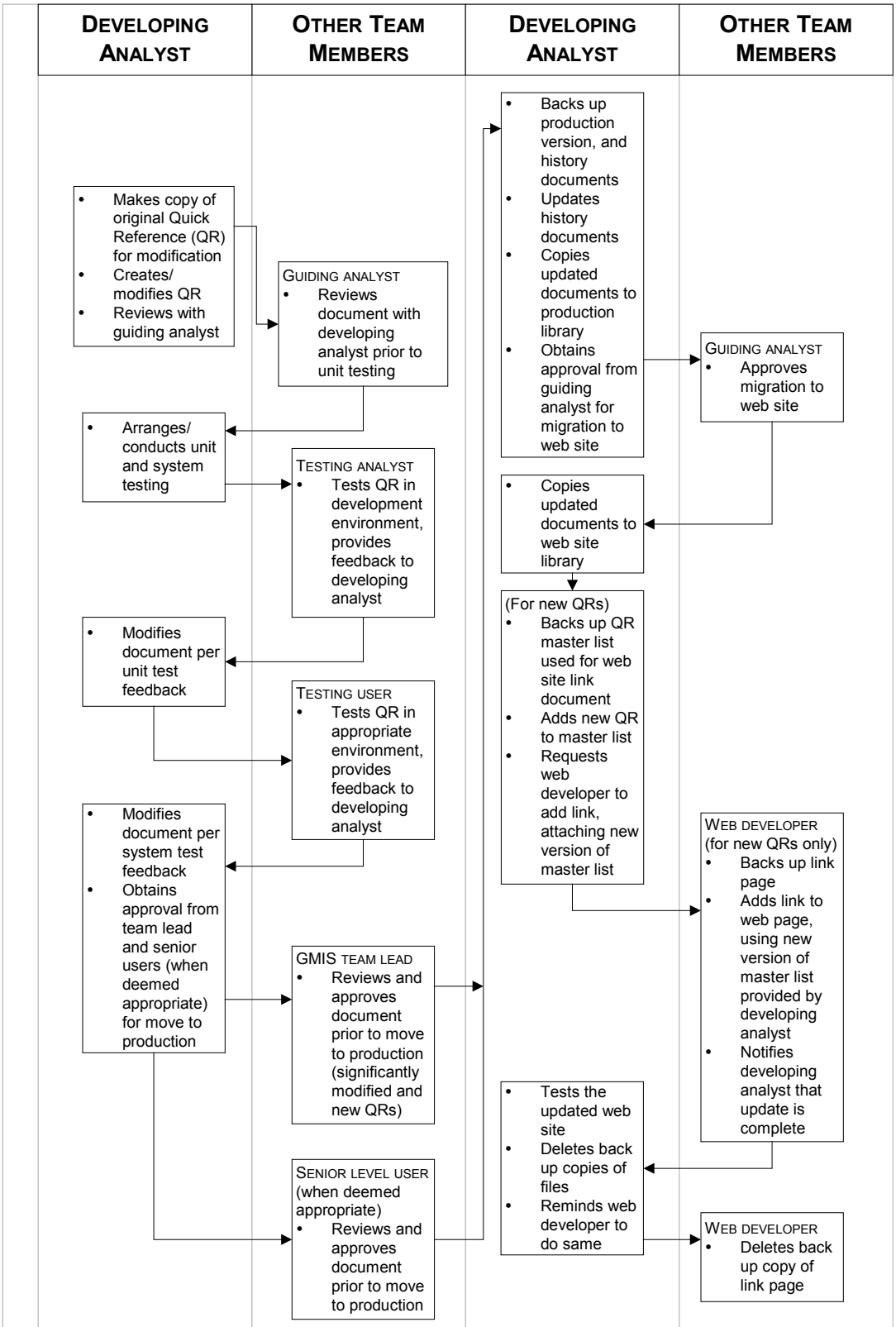
K:\101 – GMIS Work\Functional\Training\Quick Ref Development*filename*.doc

13.1.2.2 Build a new Quick Reference

Copy an existing Quick Reference to the work folder to use as a template, replacing the existing data with new data and deleting any extraneous material. This approach avoids the need to re-establish the standard format, taking advantage of work that has been done before.

- To Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development*filename*.doc



Quick Reference Update Procedure: Who Does What When

13.1.3 Review/Approve

If you are working under the guidance of or collaborating with another analyst, review the draft together and make any adjustments before proceeding to the test phase. In some cases, you may agree to combine this step with the internal unit test.

13.1.4 Unit and System Test

Testing a Quick Reference is accomplished by using the Quick Reference in a test environment to verify that it accomplishes the desired tasks, and that panel shots, sequence of events, and instructions are accurate.

The first round of testing is the unit test, an internal test process executed by development staff. When the unit test is complete, a system test, also called a QA test, is conducted with selected end users executing the process. For new processes, the Quick Reference testing and the process testing are often accomplished together, particularly at the QA stage. Because it is the written procedure that is being tested, not executable system components, QA testing may occur in any of the test environments, or in the production environment. Minor changes to Quick Reference text may not require a QA level test.

Steps in each test process are:

- Recruit other developer(s) for unit test, end user(s) for QA test
- Provide copy of Quick Reference to testers, either electronic or hard copy
- Review/incorporate feedback
- Repeat as necessary

13.1.5 Review/Approve

Submit significantly modified and new Quick References to the GMIS team lead(s) for review and approval for implementation. This is an informal process requiring no forms or signatures. It may also be appropriate to submit the document for review and approval for implementation by senior user(s) who did not participate in the QA testing, also an informal procedure.

13.1.6 Backup

13.1.6.1 To move a *modified* Quick Reference into production

Save a backup copy of the original Quick Reference.

- From Production folder:

For an application specific topic:

K:\101 – GMIS Shared\Functional\Applications\application name\Training Materials\Quick References\ filename.doc

For a General Information topic:

K:\101 – GMIS Shared\Functional\Training\Quick References\ *filename*.doc

- To Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development*filename* Backup.doc

13.1.6.2 To move a *new* Quick Reference into production

Save a backup copy of the newly developed Quick Reference.

- From Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development*filename*.doc

- To Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development*filename* Backup.doc

13.1.6.3 In both cases

For either a new or modified Quick Reference, save a backup copy of the "What's New and Different" update list (QR_002) and the "GMIS PeopleSoft Training Materials" current version list:

- From Production folder:

K:\101 – GMIS Shared\Functional\Training\Quick References\ QR_002.doc and GMIS PeopleSoft Training Materials.doc

- To Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development\QR_002 Backup.doc and GMIS PeopleSoft Training Materials Backup.doc

13.1.7 Record Update History

Now create another copy of the "What's New and Different" change history list (QR_002):

- From Production folder:

K:\101 – GMIS Shared\Functional\Training\Quick References\ QR_002.doc

- To Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development\QR_002.doc

In the work version, insert a new row at the top of the table below the headings and record a brief description of the update with the date it is expected to become available on the GMIS website. Make the description meaningful to the functional users; avoid technical terms and viewpoint.

Also create another copy of the "GMIS PeopleSoft Training Materials" current version list.:

- From Production folder:

K:\101 – GMIS Shared\Functional\Training\Quick References\ GMIS PeopleSoft Training Materials.doc

- To Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development\ GMIS PeopleSoft Training Materials.doc

In the work version, update the last saved date of the changed document. For new documents insert a new row in the table, which is in document name sequence, and record the name, title, and last saved date.

13.1.8 Move to Production

Copy the modified or new Quick Reference **and** the modified QR_002 **and** the modified GMIS PeopleSoft Training Materials.doc to the production folder.

- From Work folder:

K:\101 – GMIS Work\Functional\Training\Quick Ref Development*filename*.doc

- To Production folder:

For application specific topics:

K:\101 – GMIS Shared\Functional\Applications\application name\Training Materials\Quick References\ filename.doc

For General Information topics (including QR_002 and GMIS PeopleSoft Training Materials.doc)

K:\101 – GMIS Shared\Functional\Training\Quick References\ *filename*.doc

This will overwrite the previous version.

13.1.9 Move to Web

If you are working under the guidance of another analyst, consult with him/her for final approval prior to moving the Quick Reference to the GMIS web site.

Copy the modified or new Quick Reference **and** the modified QR_002 to the Web site folder.

- From Production folder:

Application specific Quick References:

K:\101 – GMIS Shared\Functional\Applications *application name*\Training Materials\Quick References\ *filename*.doc

- General Information Quick References (including QR_002):

K:\101 – GMIS Shared\Functional\Training\Quick References\ *filename*.doc

- To Web files folder:

H:\isd\intranet\www2\gmis\guides (on server APP02)

If this is an update to an existing Quick Reference, the web site is now updated.

13.1.10 Link to Web Site

If this is a *new* Quick Reference, prepare a request to link the new document to the GMIS web site and submit it to the Web team member supporting the GMIS site.

To prepare the request:

- Make a backup copy of

K:\101 – GMIS Work\Functional\Training\Quick Ref Development\Quick Ref List.doc

- And add the new Quick Reference in the appropriate place in the original document.
- Attach the document to a memo or an e-mail requesting that a new Quick Reference be linked to the GMIS web site. Specify the filename you saved the new document to in the web folder, and whether you want the new item flagged on the web page as "New!"

- Remind the developer to make a backup of the links page before making any changes.
- Ask the developer to notify you when the changes are active on the GMIS web site.
- Highlight or mark the addition on the attachment in some way.

13.1.11 Test the Updated Web Site

When you have moved the *updated* Quick Reference to the web directory or the web developer has informed you that the link(s) for the *new* Quick Reference(s) are active, you must test the web site:

- Access the GMIS Web site and go to the Functional page.
- Scroll down to the links chart at the bottom and select one of the application links under the column "Guides."
- Verify that the link(s) you requested are listed on the links page, are accurate, and take you to the correct file.
- Verify that the new or changed Quick Reference(s) reflect the updated material.
- Return to the links page and verify that the overall page still appears as expected.

Be sure you test with both Netscape and Internet Explorer.

If problems are detected, consult with the web developer to either correct them or restore the Quick Reference and links page (if changed) from the backup files made earlier.

13.1.12 Clean Up

Once all is satisfactorily tested, delete the following work files:

- K:\101 – GMIS Work\Functional\Training\Quick Ref Development\filename Backup.doc
- K:\101 – GMIS Work\Functional\Training\Quick Ref Development*filename*.doc

Be sure to do these deletes for all Quick References you added or updated, including QR_002, GMIS PeopleSoft Training Materials.doc, and the backup you created for the Quick Ref List (be careful not to delete the original of this file in the GMIS Work directory, as there is no production copy of this file in the GMIS Shared directory).

Send a notice to the developer that the link page backup can be deleted.